the absolute sound

THE JOURNAL OF HIGH-END AUDIO

MAY/JUNE 2023

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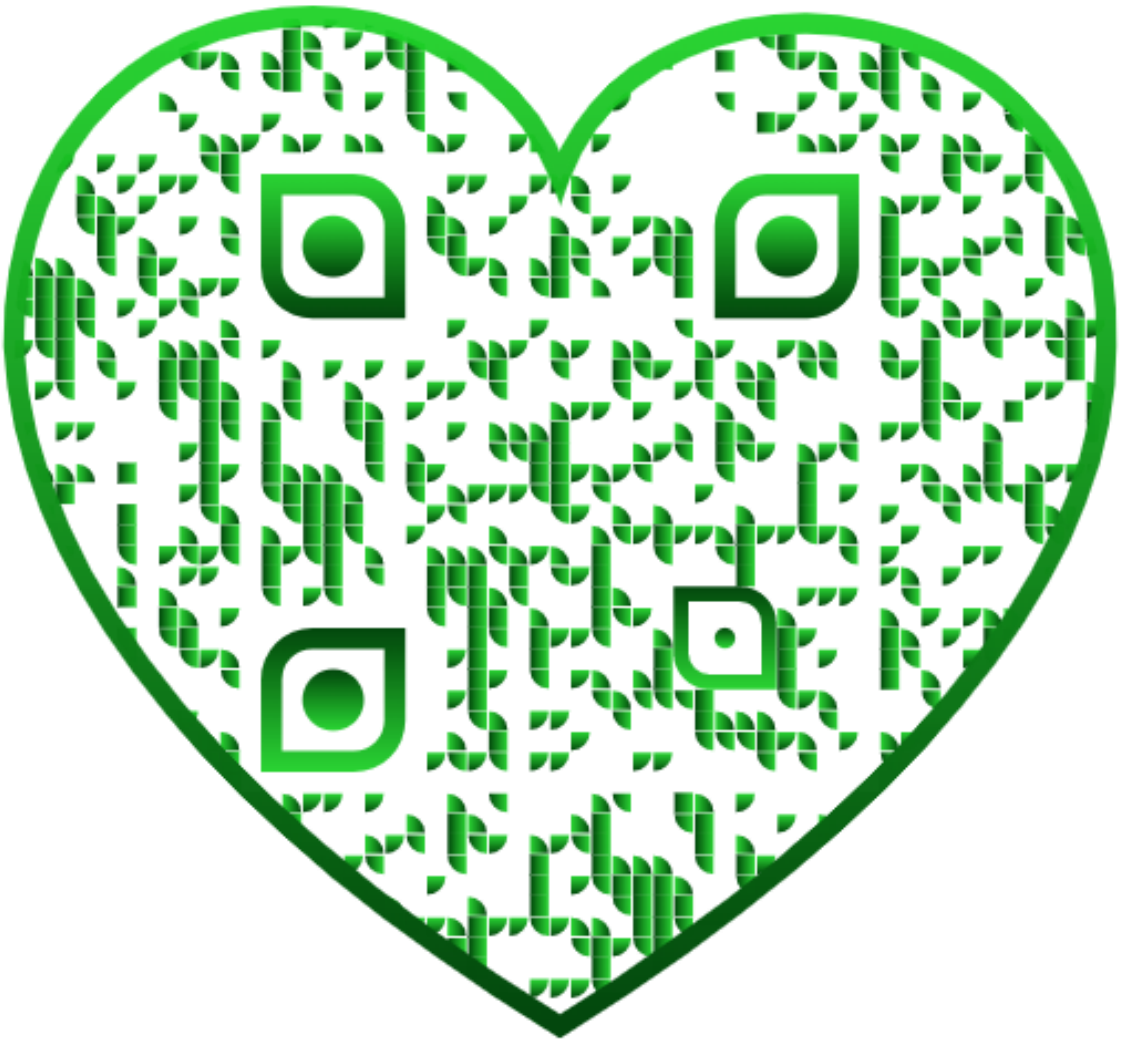

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Yukon: $495/1m pair RCAs, $595/1m pair XLRs

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Contents

ISSUE 338

the absolute sound

THE JOURNAL OF HIGH-END AUDIO

p.108

Technics SL-G700M2 CD/SACD Player and Streaming DAC

Technics has lavished its most advanced technologies on this single-box solution to digital playback. Anthony H. Cordesman explains why the SL-G700M2 is so compelling.

Contents

ISSUE 338

the absolute sound

THE JOURNAL OF HIGH-END AUDIO

p.100

Dynaudio Confidence 50 Loudspeaker

This full-sized floorstander from one of the most established names in loudspeakers shows why size and shape matter. Andy Quint reports.

It's Not Subtle

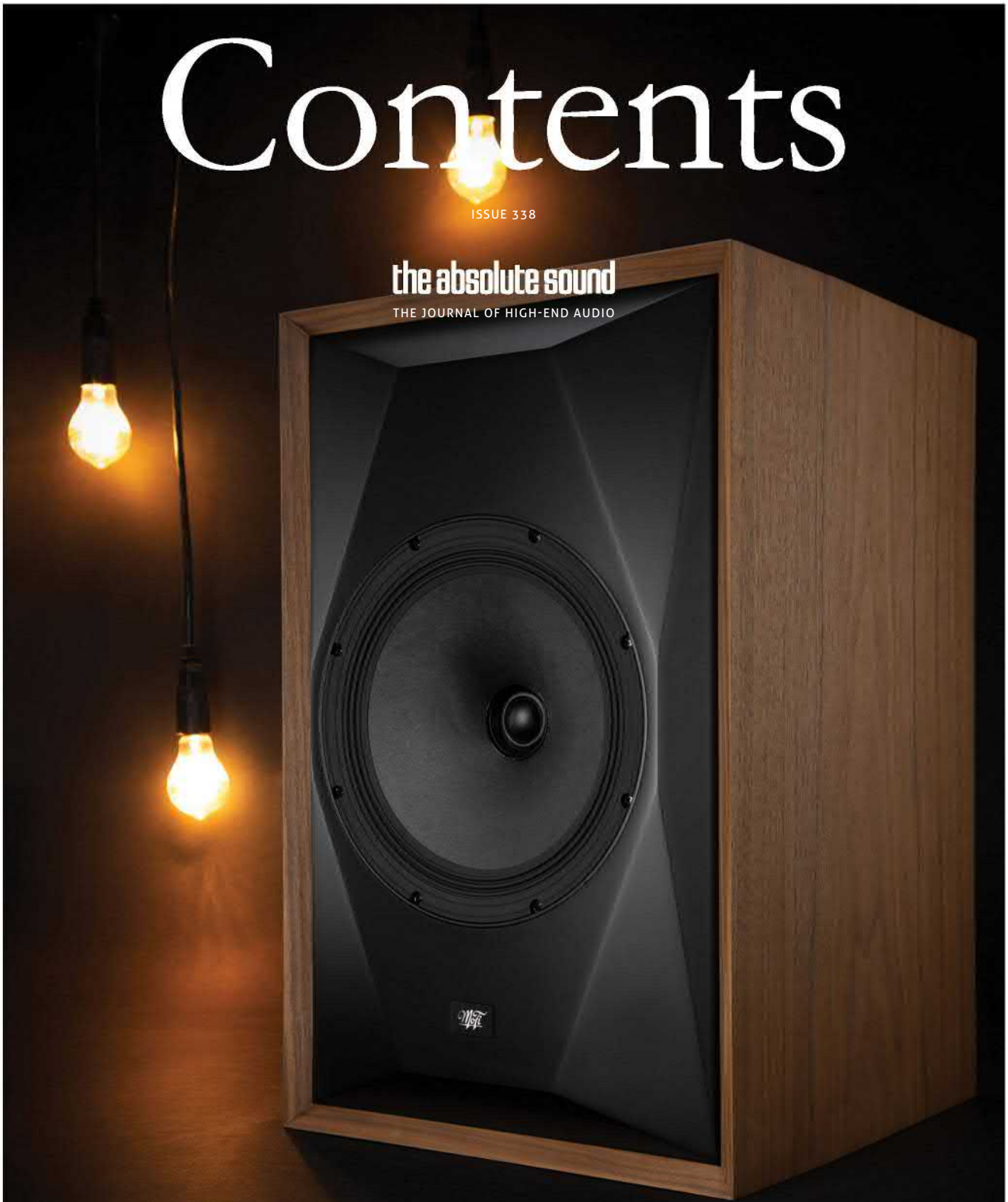
MAGICO

Contents

ISSUE 338

the absolute sound

THE JOURNAL OF HIGH-END AUDIO



p.114

MoFi Electronics SourcePoint 10 Loudspeaker

This retro-looking stand-mount from famed designer Andrew Jones delivers startling sound from a compact loudspeaker. Dick Olsher brings you the details.

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Contents

ISSUE 338

the absolute sound

THE JOURNAL OF HIGH-END AUDIO

PHOTO BY DANNY CLINCH

152
To Hell and Back
Bob Dylan's *Time out of Mind* is a particularly dark album; yet, as Greg Cahill explains, it helped reignite Dylan's career.

154
When Bowie Became Bowie
A new deluxe edition sheds light on how *Hunky Dory* was a quantum leap forward for David Bowie. Jeff Wilson reports.

156
***One Hundred Dreams* and Counting**
Pianist Satoko Fujii discusses her prolific body of work with Derk Richardson.

158
Greatest Grunge Reissues
Gil Kaufman recommends several deluxe editions of classic grunge rock albums and some overlooked titles.

162
Hedvig Mollestad's *Maternity Beat*
Jeff Wilson discusses a new collaboration between an innovative Norwegian guitarist and the Trondheim Jazz Orchestra.

164
Rock, Etc.
Elvis Costello/Burt Bacharach, the Arcs, Taj Mahal, Buddy Guy, Robert Hill/Joanne Lediger, NRBQ, Jim Carroll, Harvey Mandel, Steely Dan, Harry Belafonte, and an anthology of Japanese city pop.

172
Jazz
Frank Kimbrough, Brad Mehldau, Benny Carter, Paco de Lucia, Patricia Barber, Jane Bunnett, and Henry Lowther.

178
Classical
Performances by Lisa Batiashvili, the Pacifica Quartet, Trio Imàge, and Matthew Bengston; soundtracks by John Williams; the piano music of Scriabin; and a performance of Pietro Mascagni's *Cavalleria rusticana*.

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Pictured: Lina DAC (top) Master Clock (bottom)

dCSonlythemusic

Contents

ISSUE 338

the absolute sound

THE JOURNAL OF HIGH-END AUDIO

Features

22
Florida International Audio Expo
Alan Taffel and Andrew Quint report on the hottest new gear from Tampa.

38
Geometry of the Orchestra
Robert E. Greene discusses reproducing orchestral scale on a hi-fi system.

Absolute Analog

46
Ortofon Diamond Phono Cartridge
Michael Fremer delves into Ortofon's rich history in this in-depth evaluation of its new Diamond moving coil.

56
Lyra Etna Lambda Phono Cartridge
What's in a name? Plenty, if that name includes the "Lambda" suffix. Alan Taffel reports on the new Lyra Etna.

60
Kuzma Safir 9 Tonearm
This technically innovative tonearm from Franc Kuzma offers world-class performance, says Michael Fremer.

Electronics Focus

70
Cambridge Audio Evo 150 Streaming Integrated Amplifier
High-performance audio couldn't get any easier than this all-in-one unit: Just add speakers. Muse Kastanovich makes a case for affordability and simplicity.

134
Rockport Technologies Orion Loudspeaker
This all-new model from venerable Rockport brings world-class performance—and some surprising twists—to a moderately sized loudspeaker. Robert Harley brings you a full sonic, musical, and technical assessment of this mid-sized miracle.

76
Amped America AMP2400 Power Amplifier
Steven Stone reports on this affordable Class D powerhouse of an amp.

80
Schiit Audio Loki Max Equalizer
Robert E. Greene extols the virtues of equalizing your recordings and finds no better tool for the job than Schiit Audio's Loki Max.

92
AGD Productions Alto Preamplifier and Tempo Power Amplifier
With a new type of output transistor, these electronics from newcomer AGD Productions deliver great Class D performance, says Muse Kastanovich.

Equipment Reports

118
AudioQuest ThunderBird Interconnect and ThunderBird Zero Loudspeaker Cables
Part of AudioQuest's new Mythical Creatures Series, the ThunderBirds offer trickle-down engineering at its best. Neil Gader reports on these overachievers.

122
United Home Audio Ultima5 Open-Reel Tape Player & TAS Super Tape List
Jonathan Valin weighs in on tape guru Greg Beron's more affordable entry—the single-chassis, 15ips UHA Ultima5 with OPS-DC power supply. **Plus:** JV's list of some of the best-sounding R2R tapes on the market.

Departments

12
Letters

16
From the Editor

18
Future TAS
New products on the horizon.

20
Video Preview
A look at the newest videos on *The Absolute Sound*'s YouTube channel.

150
Manufacturer Comments

184
Q&A
Francesco Rubenni of Rosso Fiorentino.

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Letters

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Editors' Choice Updates

In the March Editors' Choice issue, I see the KEF LS50 Wireless II listed at the price of $2799. It refers to the review in Issue 286 by Julie Mullins. That review does not indicate it is the "II" version. Maybe I am mistaken, but I think the LS50 Wireless II at that price is a different speaker from the one Julie reviewed almost five years ago. [*It is a newer version; see my response below.—RH*]

Similarly, I noticed the Audience ClairAudient 1+1 V5 [*loudspeaker*] listing. (I've had my eye on these speakers for years, hoping I could justify buying them as a second set.) At the end of the listing it notes, "Original version; new V5 not yet reviewed." Yet the opening line of the listing reads, "Don't let the 1+1 V5's nearly identical appearance to its predecessors fool you; this newly upgraded version is a huge leap over its already superlative predecessor." I find this confusing. If the V5 has not yet been reviewed, on what basis can one know it is a "huge leap" over what must have been the predecessor reviewed in Issue 273?

I'm honestly not trying to be nitpicky, but in both cases it appears a newer version of a previously highly recommended speaker is being listed as an Editors' Choice, without any information on how the new version sounds or differs from its predecessor (although in the case of the V5 there does seem to be information on upgrades, yet how much those affect the sound is impossible to know as the actual product is not reviewed).

On a happier note, I'm glad to see the Rosso Fiorentino Elba2 [*loudspeaker*] is still on the list. I'm glad I followed your [*RH's*] recommendation early on, as it seems the price has jumped 40%.

Geoff Mirelowitz

RH replies: We will often update a product recommendation with the new version if we have experience with the new version or reason to believe it is superior despite not having formally reviewed it. For example, I have a pair of the ClairAudient 1+1 V5 on my desk right now and am thus confident in continuing the recommendation. The alternative is to drop products we know are worthy, which doesn't serve the reader.

The price increases on European products have been astronomical due to inflation, transportation costs, and the very strong dollar. I'm glad that you got your Elba before the price increase; it's a wonderful speaker. Coincidentally, you can read our short interview with Rosso Fiorentino's founder in this issue's Q&A.

An Insightful Perspective on Speaker Sensitivity

I enjoyed your [*RH's*] "From the Editor" in the February issue explaining loudspeaker sensitivity. Just the facts! If I may, I wanted to give you an amplifier designer's perspective of the speaker manufacturer's quest for higher and higher sensitivity. I agree with the engineering analysis you present—that speaker sensitivity and amplifier output power is a one-for-one tradeoff. With lower-powered amplifiers, especially single-ended tube amps, higher-sensitivity speakers are a blessing and add to the listening enjoyment via better dynamics and transient response. In today's marketing environment, speaker sensitivity has become the primary figure of merit, so we get higher and higher performance across the entire field.

A problem that I have run across is when a higher-sensitivity speaker is paired with a high-powered amplifier. As you know, the transfer characteristic of any amplifier (power in vs power out) is governed on the low end by noise performance and on the high end by saturation, forming what engineers refer to as an "S-shaped" transfer curve. As designers, we work hard to extend the linear center of this curve to be as wide as possible. That linear curve area is where the amp performs best—lowest THD, best transient response, etc. When high-powered amps are paired with high-sensitivity speakers, sometimes, in normal listening, the amp is running in the lower knee of that transfer curve rather than in the linear region and consequently doesn't yield the best overall system results. In my experience, I have found that speakers in the 85dB range perform best with our higher-powered amplifiers. At normal listening levels, the amp is running in the central linear region of the transfer curve and is performing at its best.

Roger Gibboni
Rogers High Fidelity

Reviewing the Reviewers

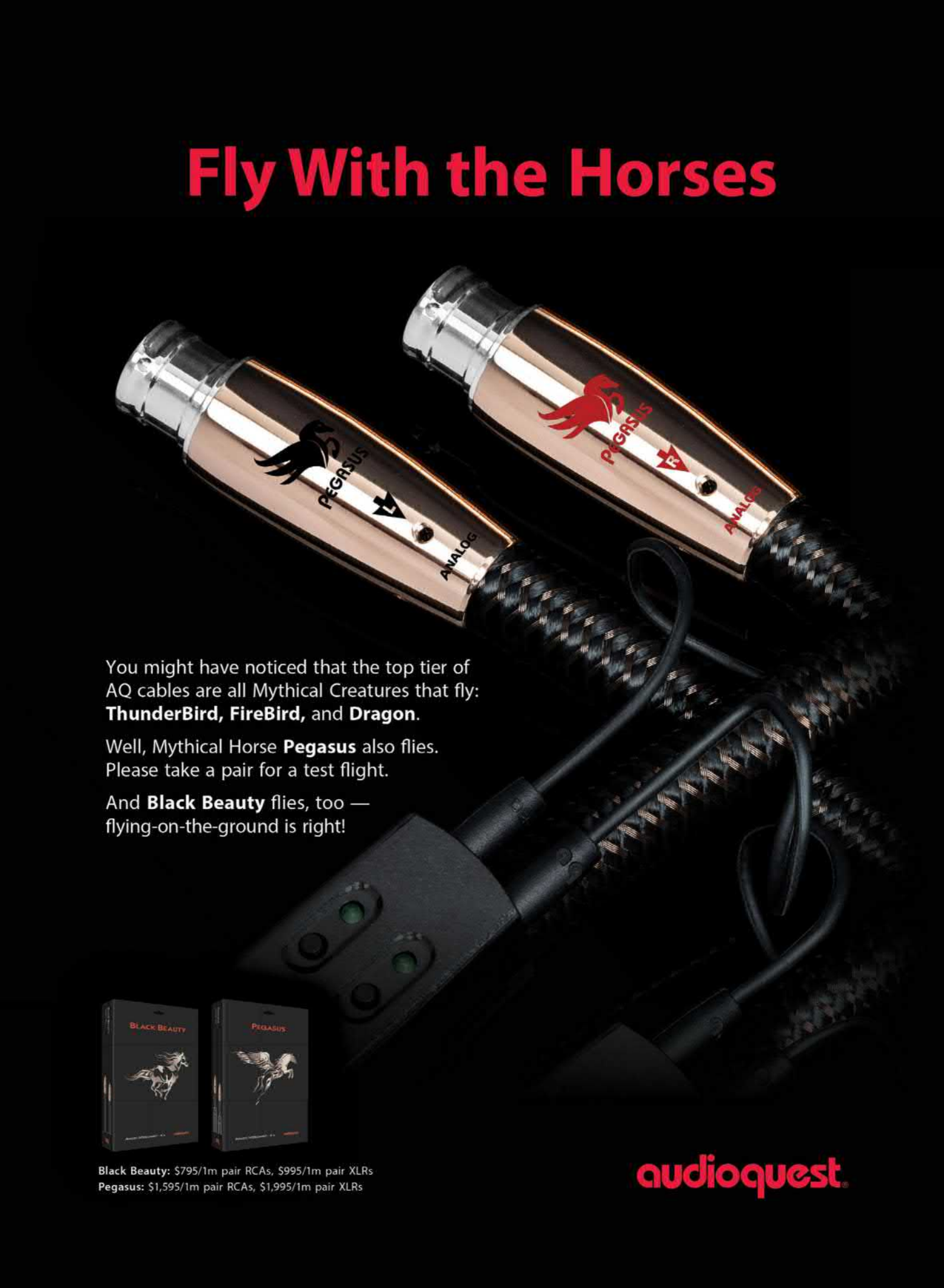
I wanted to comment on your response, in the March 2023 Letters section, to Mr. Stew Margolis. [*Mr. Margolis asked how to judge whether a reviewer is competent and honest given the recent influx of inexperienced online audio "reviewers."*]

First, I am just as cautious and cynical as the next guy when something seems remiss or suspect. Nevertheless, I don't really understand, in the context of so many years of readers following TAS and the other journals that serve our hobby, the fuss about distrusting reviewers' objectivity simply because they have gotten very excited about a particular product or company, especially when this excitement leads a given reviewer to purchase the item.

At the end of the day, I am willing to grant a certain amount of benefit of the doubt and trust reviewers' honesty and transparency. As I see it, I can do this for two main reasons. First, reviewers are essentially no different than me or any other consumer, in that they vote with their pocketbooks. If anything, the fact that a reviewer has "put his money where his mouth (pen?) is" should serve to assure readers that he has made an honest assessment of that product without some sort of nefarious bias and, thus, can be trusted.

And for "long-term loans" swaying a reviewer toward an unbalanced bias for the lending manufacturer's offerings? This brings me to reason number two. As you stated it in your reply, Robert, anyone who has followed your reviews for any length of time should be able to apply common sense to the equation—the reputation for honesty, transparency, and thus, trustworthiness that one has seen a given reviewer work hard to provide should be easily dis-

Fly With the Horses



You might have noticed that the top tier of AQ cables are all Mythical Creatures that fly: **ThunderBird, FireBird,** and **Dragon**.

Well, Mythical Horse **Pegasus** also flies. Please take a pair for a test flight.

And **Black Beauty** flies, too — flying-on-the-ground is right!

Black Beauty: $795/1m pair RCAs, $995/1m pair XLRs
Pegasus: $1,595/1m pair RCAs, $1,995/1m pair XLRs

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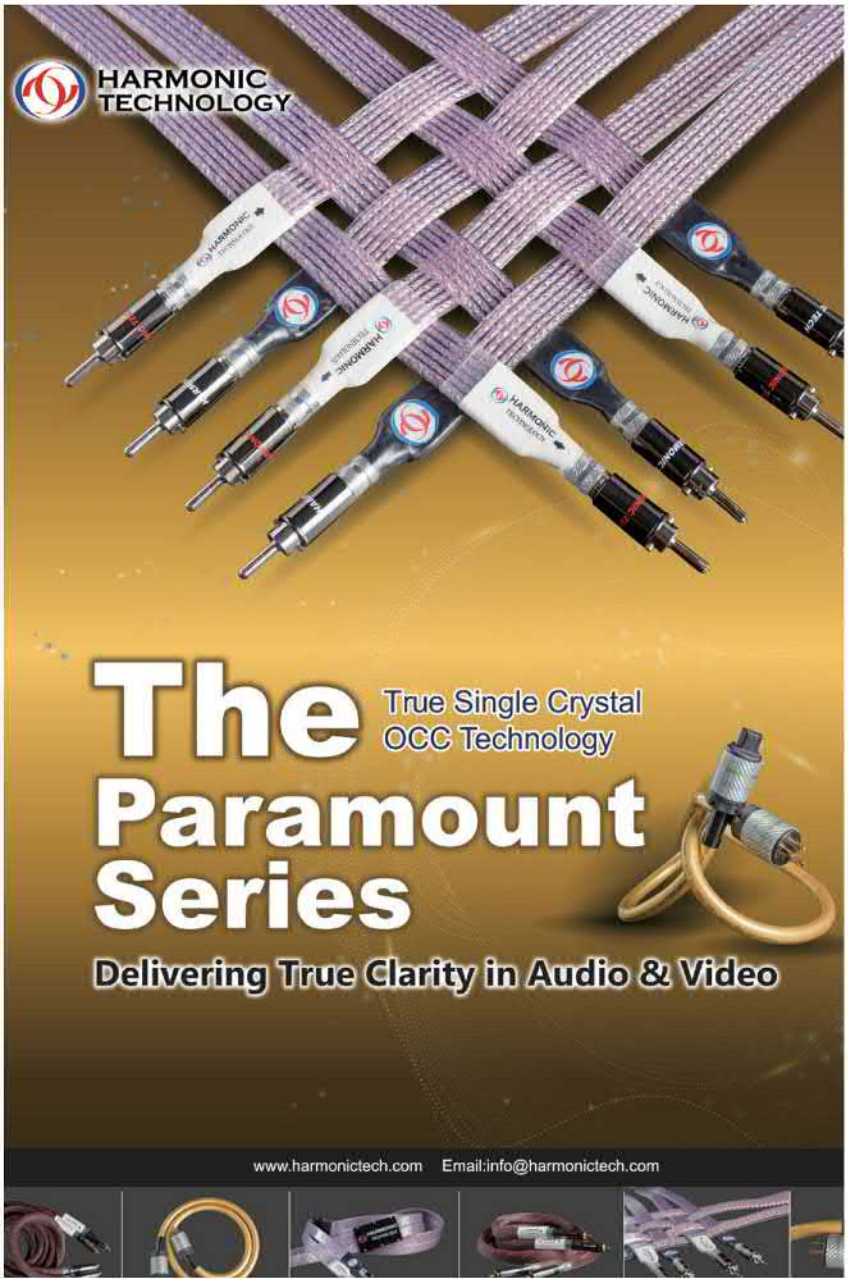
cernible…*from his body of work*. Hence, your point (if I grasped it correctly) about the breadth and depth of experience of your "stable" of reviewers.

Can things occasionally go off the rails? Of course. I'm not naïve. But, again, I argue that a reasonably intelligent reader will be able to ferret out that occasional occurrence and apply a heavy dose of salt to what has been written. No need to get worked up over a fringe issue when most journals (including TAS) give readers all we need to choose the reviewers that we will trust to behave as good gatekeepers.

I can say that many of your "reviewing bench" members provide much for us readers to place our confidence in, certain that, most of the time, we can feel safely that we are in good hands.

Thanks for the journey (for me, over 40 years now!).

Charlie Lein



The Value of Variable Damping Factor

In your [*RH's*] review of the Burmester 159 amplifier [*Issue 333*], you questioned why the Burmester's variable damping factor feature was desirable: "Isn't a higher damping factor always preferable?" Burmester's response was quite general. I'd like to give a specific answer, citing two examples I've encountered where correct damping factor (DF) mattered very much.

My next-door neighbor once owned Klipsch Cornwalls, which he was driving with a Crown DC-300 (renowned for its high DF); there was no bass. When he hooked up an Audio Research tube amp, there was plenty of bass. The explanation is that the stiffly suspended, heavy 15" woofer was stopped by the Crown amp's high DF before it could overcome inertia and actually get moving.

Another example involved the Pentagram P10, a speaker with a 10" woofer and a 15" passive diaphragm. I heard the P10s in many places with amps with moderate DFs, and the bass sounded very good. I also heard them driven by a Phase Linear 400 (a high DF amp), which made their bass sound laughably bad—you could clearly hear the woofer stop quickly while the 15" passive radiator kept "flopping" around. With appropriate DFs, the woofer and passive radiator worked together.

BTW, some vintage tube amps, such as the Heathkit W6M, had variable damping factor—an idea I love.

Alan Rauchwerger

UPCOMING IN TAS 339

***The Absolute Sound*'s 50th Anniversary Issue: Classic reviews and articles from TAS! PLUS, Special 50th Anniversary SuperLP List!**
Full report from the AXPONA show
JV on the Acoustic Signature Invictus Neo turntable
RH on the Wilson Alexia V
Neil Gader on the EAT's C-Dur turntable
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From the Editor

Inside the Sausage Factory

How do we choose products for review in *The Absolute Sound*? Why do we review certain components and not others? What are the criteria for inclusion in the magazine?

I'm sure that many readers have asked these questions, so I'll share with you some of the decision-making that goes into the process. I'll also let you in on the behind-the-scenes maneuvering that sometimes occurs as manufacturers jockey for position in our pages.

Although we publish many more reviews than other magazines, TAS can only cover about 80 to 90 products per year. That math dictates that we must be very selective in choosing review candidates out of the many hundreds of new product introductions every year.

The selection criteria start with whether we have reason to believe the product will be outstanding. That initial indication can be based on hearing the device at a show, the company's track record, or positive word-of-mouth from trusted sources. Other criteria include whether the product is readily available for audition and purchase; many worthy European and Asian components are excluded simply because the manufacturer has no representation in North America. You can, however, learn about these products from our coverage of the Munich show, which appears in our September issue.

Another factor is the company's longevity, reputation, and market presence. We tend to focus on established companies that have proven themselves worthy of your attention. Yet, at the same time, the magazine needs to be open to promising newcomers. Today's fledgling manufacturer could be tomorrow's powerhouse. Our strategy is to focus on the reliable brands with solid dealer networks, but with an eye to nurturing the next generation of designers and manufacturers. When Jonathan Valin reviewed the Magico Mini in 2006, Magico was a one-man show, with Alon Wolf building the speakers himself and packing them in the shipping cartons. Similarly, esoteric products from little-known companies are included as "seasoning" rather than as the main ingredient. The occasional presence of these offbeat items—some of them sonically outstanding—gives our readers a more comprehensive picture of the field than if we stuck strictly with the familiar brands.

Within these general guidelines, there are two additional considerations when choosing products to review, the micro and the macro. The micro-perspective considers each issue as a self-contained entity that stands on its own. I strive for a product mix that will likely appeal to the most readers—some electronics, some analog, some digital, some cables—along with a wide variety of price points and inclusion of different reviewing voices. It's the "something for everyone" approach.

But then there's the macro-consideration: How our product selection reflects the magazine's values when viewed over the long haul. The products that appear in the magazine are, in aggregate, a statement of who we are and what we believe in—the magazine's ethos.

Once I determine that a product is a good fit for the magazine, there's the question of matching it with the right reviewer. Each of our writers brings different interests and sensibilities to their reviews. Steven Stone doesn't review $100k turntables, and Michael Fremer doesn't evaluate the latest music-management software, for examples. A new tube amplifier? That would be our tube maven Dick Olsher. We are fortunate to have a "reviewing bench" that is astonishingly wide and deep. No matter what the product, we have an extremely experienced reviewer who can expertly evaluate the product and write cogently about it. Our reviewers' systems range from entry-level to state of the art, with all stops in between.

The intense competition for a review slot, along with the tremendous value that a review in *The Absolute Sound* brings to a company, encourages some manufacturers to try to game the system. After 34 years in the field, I've seen all these sneaky methods firsthand. The oldest trick in the book is for the manufacturer or distributor to send a product to a reviewer (unbeknownst to me) under the pretext of the product being "not for review, just for you to listen to," and then a month later he starts asking when the review will appear in the magazine. This tactic is popular because it has the advantage of plausible deniability.

We've recently overcome the space limitation in the magazine by launching our own YouTube channel (youtube.com/@TheTASmagazine), with product reviews and more. Our video channel greatly expands our ability to cover more products than is possible in a print magazine. The video medium also allows us to share the joys of high-quality music reproduction with a new audience.

However you access our reviews, know that much thought and consideration goes into curating a product selection that best serves our valued readers.

Robert Harley

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NAD CS1 Endpoint Network Streamer

The NAD CS1 Endpoint Network Streamer allows you to add streaming to any audio or home-theater system, even just a pair of powered speakers. The compact unit features an advanced differential digital section based on Texas Instruments' PCM5141 DAC, a design known for its low noise, dynamic performance, and immunity to clock jitter. Employing audiophile-grade components, the CS1 can play high-resolution audio up to 24-bit/192kHz. It features Bluetooth, Ethernet, and dual-band Wi-Fi that supports the most popular streaming services, plus network sharing via DLNA/UPnP protocols. And there's full MQA rendering and decoding capability for playing Master Quality music from Tidal. The CS1 has a pair of RCA analog outputs for connection to a stereo receiver, integrated amp, preamplifier, or a pair of powered speakers. Plus, it has optical and coaxial outputs for sending digital audio at up to 24-bit/192kHz resolution to powered loudspeakers with digital inputs. **Price: $349. nadelectronics.com**

McIntosh MC451 Hybrid Power Amp

THE MC451 is the latest model to incorporate McIntosh's Hybrid Drive™ technology—a unique and seamless combination of a vacuum-tube and solid-state amplifier. The MC451 is designed to drive bi-ampable speakers, with the solid-state section powering the woofer and the tube amplifier driving the midrange/tweeter. A built-in crossover splits the frequency band before the power amplifiers. Following the success of McIntosh's MC901 model, the MC451 is strategically built so that it is easier to place within an audio system, offering 150W of power from the vacuum-tube section and 300W from the solid-state section. The MC451 features a variety of McIntosh-patented technologies, including the DualView™ power-output meter with illuminated driver tubes. Separate inputs for the tube and solid-state amplifiers are provided for using an external crossover. The solid-state input doubles as the mono input when using the internal crossover. Equipped with 2-, 4-, and 8-ohm taps. **Price: $14,000 each. mcintoshlabs.com**

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Price: $13,900, Model 12 MK2 w/309 tonearm (pictured); $47,900 for the Model 30 MK2 w/Series V tonearm; Model 6 w/M2-9 tonearm, $7995; Model 60 w/ new Series VA tonearm $71,900. bluebirdmusic.com

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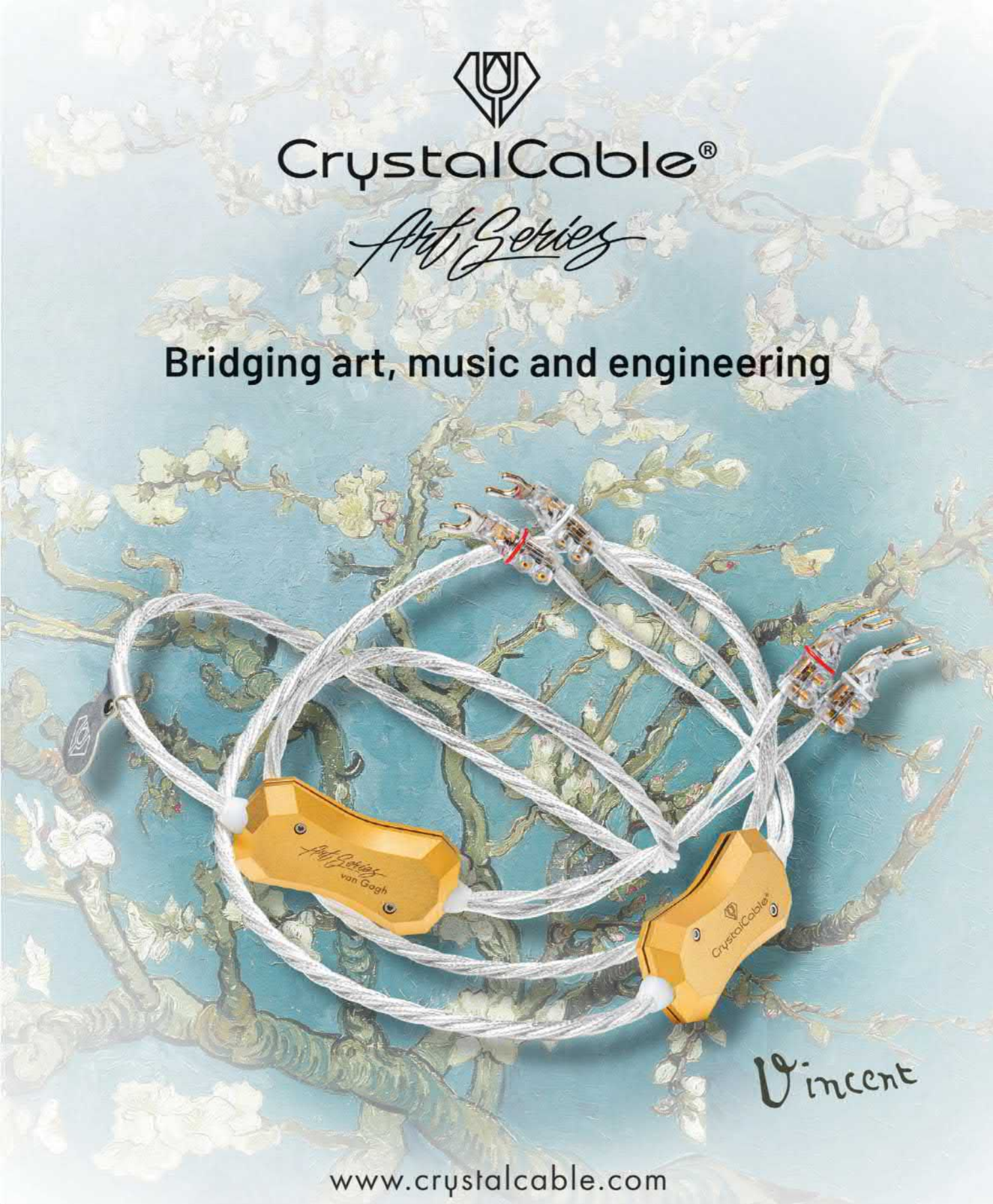

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Michael Fremer enjoys his Wilson Audio Chronosonic XVX loudspeakers as a part of his 4k room tour.

Robert Harley interviews Peter McGrath on Wilson Audio's Alexia V ahead of Robert's upcoming review.

Burmester Team Lead of Acoustic Engineering, Pascal Bings, explains Burmester's history using KPM's ceramic horns during the second part of our Burmester factory tour.

Andrew Quint and Alan Taffel share their most exciting discoveries at the Florida show.

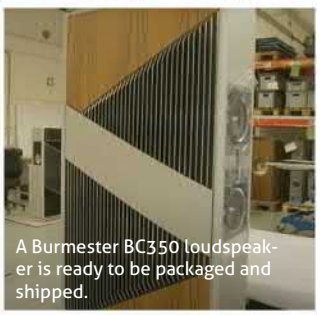
The Absolute Sound's Pete Trewin interviews Burmester's Dina Hoenge on the manufacturing process of the BC350 loudspeaker.

The Absolute Sound's YouTube Channel

Robert Harley

Lee Scoggins sits down with founder and lead designer of Acora Acoustics, Valerio Cora.

Tom Martin reviews the Technics SU-G700M2 digital integrated amplifier.


A Burmester BC350 loudspeaker is ready to be packaged and shipped.

If you're looking for more great high-end audio content, check out *The Absolute Sound*'s new YouTube video channel. Our channel is chock-full of videos (more than 125 and counting) that cover everything from a nostalgic look at classic audio products to reviews of the latest components. We've got behind-the-scenes factory tours, show reports, audio-basics tutorials, and designer interviews.

We've also got product reviews, primarily of lower to mid-priced components that are stunning overachievers. New videos on our channel include an extended tour (in 4k video) of Michael Fremer's listening room; full coverage of the Florida show by Michael Fremer, Alan Taffel, and Andrew Quint; a review of the amazing Technics SU-G700M2 digital amplifier complete with an in-depth look at this product's unique technology; an audio-basics video exploring subwoofers and bass performance; a look at why transmission-line speakers are out of vogue after popularity in the 1970s, and much more.

Whenever manufacturers or designers visit my listening room to set up a piece of equipment, I'll interview them in my listening room about the new product. You can find my first two interviews on our channel, the first with Oliver Göbel of German speaker-maker Göbel High End as well as a video of Rockport Technologies' President Josh Clark taking us through the design of the new Orion loudspeaker. The latest video is with Peter McGrath as we compare and contrast Wilson's Chronosonic XVX with the new Alexia V.

Video is an exciting way of delivering more, and more varied, content than we can provide in the magazine. We also hope to reach the next generation of music lovers who care about sound quality. Go to youtube.com/@TheTASmagazine. While you're there, be sure to hit the "Subscribe" button so that you're notified of new videos. You can also sign up for our weekly newsletter. I hope you'll check it out. tas

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KEF

The 2023 Florida International Audio Expo

ALAN TAFFEL AND ANDREW QUINT REPORT FROM THE SHOW WITH A (SLIGHTLY) NEW NAME

WE BEGIN WITH the news that FLAX, as it's come to be known, will be no more—at least, not under that moniker. Not that there's any issue with the health or sustainability of the South Florida show that just completed its fourth annual run. Quite the contrary. The show, held at the cumbersomely named Embassy Suites by Hilton Tampa Airport Westshore, sold out all available exhibitor rooms—all 14 floors of them—and attendance was the best ever.

But perhaps you noticed that the name of the show has changed, from Florida Audio Expo—FLAX—to Florida *International* Audio Expo, reflecting the robust participation of foreign manufacturers and audiophile visitors. We can assure you that the show will return in February 2024, and in subsequent Februarys, but we'll be needing a new shorthand for referring to the show. Maybe simply "Florida" or "Tampa." Definitely not FLIAX.

The growing success of the Florida assemblage owes a lot to the efforts of Bart Andeer, the show's Operations Manager and one of the four individuals who founded it. Andeer is a former tugboat captain whose specialty was moving oil rigs around, so it's no surprise that he has a gift for logistics. Sure, there were annoyances that no one could control—lines for the elevators, some iffy Internet connectivity when everyone wanted to stream "Keith Don't Go" at the same time—but for the most part things ran very smoothly. The registration process was efficient, signage was helpful, and the availability of food and drink in a convivial central location allowed attendees to concentrate on listening and networking.

Bart continues to fight the good fight to expand high-end audio's constituency. He advertised the show on jazz and classical radio stations and on college campuses. He let in the spouses and kids of ticket holders for free. While the halls were still mostly filled with throngs of middle-aged men, there were signs of hope.

As in the past, the two of us have divided our coverage along admittedly blurry lines. This time, Alan focused on "Inspirational" products—those that many of us can realistically consider from a financial standpoint, if they float our boat (sorry, Bart) sonically—while Andrew took on "Aspirational" gear—the stuff we'd contemplate for the ultimate in sound quality if cost were truly no object. As in the past, we set no concrete dollar boundary lines. How did we determine which systems were inspirational and which were aspirational? To paraphrase former Supreme Court Justice Stewart Potter's 1964 comment regarding hard-core pornography: "We know it when we see it."

Below you will find what each of us judged the top ten most significant product introductions in our category. You'll also see our top five systems. For the Best of Show awards, we allowed ourselves to stray beyond our designated realms and consider the entire show. We apologize in advance for those with worthy products or rooms that we didn't have space to write about.

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Soulnote showed off a raft of new components and also, along with Perlisten speakers, had excellent sound.

ALAN TAFFEL

Ten Inspirational New Products

Aesthetix has had great success with its Mimas tubed integrated amp. And why not? Its modular design allows buyers to pay only for what they need; it sounds terrific; and the price is right ($9k plus $1250 per optional card). But there are unquestionable sonic advantages to giving linestages and power amps their own chassis and power supplies, as well as to separating digital and power-amp circuitry. For those seeking those benefits, Aesthetix has essentially split the baby into the still-modular **Pallene** linestage ($6500 plus optional cards) and the 160Wpc **Dione** stereo power amp ($7500). You do pay a premium for those dual chassis, but Aesthetix believes customers will still find the combination a good value. In the Upstream Audio room, driving **Focal Kanta No. 2** speakers ($11k), the sound was big and punchy, yet relaxed in the traditional Aesthetix manner.

The cable company **M101** was showing, for the first time, the production version of its **Nova Ethernet** cable ($1199/1.5m). In a demo comparing the Nova with a generic Cat 8 cable from Monoprice, the difference was stark in terms of transient definition, tonal density, and spaciousness. Bravely, the company also compared its new cable with AudioQuest Diamond. The two had different tonal balances, with the AQ sounding fuller in the mids and bass but less extended on top.

The speaker's bass was deep and extraordinarily clean—among the best I heard at the show regardless of price.

You may remember **Soulnote** from our Capitol Audio Fest report. The Japanese company's engineering staff exclusively comprises Marantz veterans. At CAF, Soulnote made its U.S. debut and showcased a raft of new products. Florida saw a hugely expanded range, including the **A-1** and **A-2** integrated amps, which put out 50 and 100Wpc respectively ($4k, $8k), the **E-1** phonostage ($4k), and the **D-1** and **D-2** DACs ($7k, $9k). The D-2 distinguishes itself from the D-1 with an external clock input, quad (rather than dual) ESS DAC chips, a higher-voltage power supply, and copper-wrapped circuit boards to reduce noise without relying on filters.

The venerable Toronto firm **Gershman Acoustics** was celebrating the 30th anniversary of its **Grand Avant Garde** speaker. The anniversary edition ($17k) features a new bass trap, which looks like a thick plinth under the speaker. Said to do a better job of dissipating low-frequency backwaves, the new trap certainly proved its mettle in Florida. Indeed, the speaker's bass was deep and extraordinarily clean—among the best I heard at the show regardless of price. The rest of the system was no slouch, either, aided by VAC electronics and Cardas cables.

Right at the upper end of my category, **MC Audiotech** showed off the **TL-12** transmission-line speaker ($25k). The model acts as a dipole from 300Hz to 20kHz and boasts 92dB sensitivity. As driven by Modwright electronics, the speaker proved wonderfully open and dynamic, with excellent timbral differentiation.

CAD (Computer Audio Design) had some new tricks up its sleeve in its line of grounding accessories. The **GC1.1** and **GC3.1** ($2250 and $5500, respectively) have been given a .1 appendage to reflect refinements that trickled down from the flagship GCR ($29k). Yet CAD's coolest introduction was a **USB Control**

The new bass trap on the 30th anniversary edition of the Gershman Grand Avant Garde delivered.

Insert this $750 CAD device into any open USB port for system-wide ground filtering.

Eminent Technology's 18LS prototype is a hybrid dynamic/planar design that delivered outstanding sonics.

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MBL's combination of the 101 Mk II and its top electronics earned AT's Best of Show award.

The new Borreson X3 costs just $11k yet features the company's ribbon tweeter, carbon weave cones, and a carbon fiber enclosure.

The Haniwa audio system was unconventional but the sound was pure and relaxed.

The Linear Tube Audio/Meitner/Credo system was one of the top 5 Inspirational setups in Florida.

Stick that runs just $750. CAD says you plug it into any open USB port in the system (even one used for firmware updates), and it will filter ground noise. The same filter is also built into the new **USB II-R** cable ($1500) or as an in-line adapter ($750) for USB cables from any other brand.

Transmission-line speaker debuts were a thing in Florida. Besides the MC Audiotech TL-12 above and the Clarisys models described in Andy's report, **Eminent Technology** was showing a prototype of a new model dubbed the **18 LS** (approx. $15k). The speaker is a hybrid design, with six 8" dynamic woofers and two rear-facing 6.5" woofers handling low frequencies, while neodymium planar-magnetic midrange and tweeter drivers hold up the mids and highs. At the room's exit was a whiteboard where visitors could scribble their reaction to the speaker. Comments ranged from "Best sound here!" to "Wowzaa!! Blown away!" The sonics were outstanding.

Audio Group Denmark, which in-

ALAN TAFFEL'S TOP FIVE INSPIRATIONAL SYSTEMS

IN ONE OF the first rooms I entered, the **Linear Tube Audio/Meitner/Credo** room, the system was pulling off that rarest of phenomena: playing a piano recording that actually sounded like a piano. Indeed, everything in this under-$25k system, which also included **van den Hul** cables, came across with zero "hi-fi" artifacts, leaving only good sound and good music. There was even solid bass from the demure **EV 350 Reference** speakers.

As it did at CAF, **Fidelity Imports** booked a block of rooms, each highlighting products at a specific price point. The best sound, unsurprisingly, came from the top-tier system, which still (marginally) qualified as Inspirational. The **Soulnote A-2** integrated amp, **D-2** DAC, and **E-2** phonostage ($9k) made an ideal match for the **Perlisten S7t** speakers ($20k). The source was a **Michell Audio Gyro SE** with **TechnoArm2** ($5500). Together, they melded old-school looks with a mellow tonal balance that still packed plenty of jump and resolution. This was one of the most musical systems at the show.

The **Haniwa Audio** system was unusual but effective. The boxless speakers consist of a single 6" driver with a large waveguide that had everyone mistaking them for horns. These point-source transducers come bundled with a 400Wpc Class D amp, two subs, cables, and a DSP unit that handles crossover, phase-, and frequency-correction functions. All for $24k. Just add a source. How did it sound? It turns out that when you eliminate multiple drivers, boxes, and crossovers, what's left is pure, relaxed music.

More conventional was the setup in the **Orchard Audio** room. With *extremely* affordable Orchard electronics (e.g., the $2500, 500Wpc **Starkrimson Stereo Ultra** power amp and the $550 **PecanPi** streamer), **Soundfield Audio M1V2** speakers ($2200/pair) and **Triode Labs** cables, the total system came in at just over $5k—the least expensive system I heard at the show. Yet the sound was far from bottom of the sonic pack. As you'd expect at this price point, there were some limitations, particularly in the area of high-end extension. But this system got the midrange just right, and bass was surprisingly impressive. Arresting sound at a steal of a price.

The last system I'll highlight was simplicity itself. In the **Mobile Fidelity** room, the ever-effervescent Andrew Jones held court, describing his $3699 **SourcePoint 10** coincident-driver speakers that made such a splash at CAF. Driving them was the new **HiFi Rose RS520** integrated amp/streamer that happened to list for nearly exactly the same price. Add in cables, and you still have a system that comes in under $10k. But, boy, did it sound like it cost more than that! Performance highlights included outlandishly good bass, great imaging, plenty of resolution, and an equal degree of drive. If I had $10k to buy a complete system, this would be a prime candidate.

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cludes **Aavik** electronics, **Børresen** speakers, and **Ansuz** accessories, has been busy. At the Florida show, in a series of rooms organized by **Next Level HiFi,** the Danes introduced two significant products. The first, the Aavik **Forte 41** ($5500) is an integrated amp with built-in streamer. The unit puts out 100 Class D watts/channel. The new amp was driving the nearly as fresh Børresen **X3** speakers ($11k), featuring the firm's ubiquitous ribbon tweeter, a 5" bass driver with a carbon-weave cone, and an identical 5" passive radiator woofer.

Acora has now become so established that its mere name on an exhibit room door is enough to generate considerable buzz. For the first time, Acora was at a show in not one room but three. Many lined up to hear the little **SRB**, which in Florida was being driven by a pair of new 60-watt **Ampsandsound Casablanca** monoblocks ($16k). The amp's first outing was a success, driving the Acoras with ease and delivering a highly rhythmic, appealing sound.

Finally, allow me to introduce you to a new-to-the-U.S. cable company. **Viablue** hails from Germany and brought its full line to Florida. These are very complex cables, with multiple wire types, sizes, topologies, insulators, and air pipes within their bendable sheathing. Despite that, they're all quite affordable, as these things go. One-meter runs cost anywhere from $500–$1000. I suspect we'll be hearing a lot from Viablue.

The simple two-component setup in the Mobile Fidelity room yielded the best sound (cost considered) at the show.

ALAN TAFFEL'S BEST OF SHOW

Best Sound (price no object)

The obvious choice is the Acora room, with the amazing new **VRC** speaker and an impeccable **VAC/Ortofon** system behind it. Yet, I had a slight preference for the **MBL** system. Consisting of the **101 Mk II** speakers, the company's flagship electronics, and a new **UHA** tape deck, this was the best I've ever heard the 101s sound—so much so that I understood why MBLs are JV's reference. The system had a touch more warmth than the Acora room did, which I liked, and the speaker's omnidirectional radiation pattern meant that every seat was a winner.

Best Sound (considering price)

Only the treble roll-off kept me from bestowing this award on the least expensive system I heard, the roughly-$5k ensemble in the **Orchard Audio** room. Instead, the title goes to the **Mobile Fidelity/HiFi Rose** room, whose $10k system had no such limitations. Listen to this system, reminding yourself that it only costs $10k, and your jaw will drop involuntarily.

Most Significant New Product

Unquestionably, the **Acora VRC** described in Andy's report. It had he most impressive bass in spades, but its tubed amps couldn't quite match the iron grip exerted by MBL's 840-watt (*not* Class D) monoblock colossi. This was a system to die for.

Most Significant Trend

I was delighted to note the ever-expanding supply of modular integrated amplifiers. Virtually every new model at Florida either included or had the ability to expand beyond basic functions, with options such as DAC, phonostage, and streaming. This trend is a boon for the space-challenged audiophile.

Best Demo

In the **Suncoast Audio** room, one could hear before and after demonstrations of the **Shunyata Altair** grounding system that RH praised so highly in a recent TAS cover story. Despite such fanfare, one always approaches such accessories with a healthy skepticism. But in this case any skepticism was misplaced. The Altair is the real deal. As demoed on an excellent system, removing the Altair rendered the sound muddy, spatially flat, and dynamically constrained. Putting it in restored clarity and also dramatically increased bass articulation. While Robert's complex system required a similarly complex (and expensive) Altair implementation, the Altair in Tampa cost a mere $6k, which Shunyata says is typical of normal systems. Let me tell you, the improvement was far more than you'd expect for that kind of money.

Best Joke

At a lively dinner discussion with Eli and Ofra Gershman of Gershman Acoustics speakers, we were playfully discussing whether cryogenically freezing speakers could have a sonic benefit. Then we wondered, even if it did work, how you would do it. After some cheerful brainstorming, Ofra, whose Toronto speaker factory gets the brunt of Canadian winters, had the best idea: "We'll just put them outside!"

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ANDREW QUINT

Ten Aspirational New Products

Presented in public for the first time in North America by **Suncoast Audio** of Sarasota were two loudspeaker models from Swiss manufacturer **Clarisys Audio**. In business since 2014, the company's stated mission is to build full-range ribbon transducers in the style of those produced by Apogee between 1981 and 1995. (In fact, Clarisys can refurbish your old Apogees, if you're so inclined.) The **Minuet Neo** ($33,800) stands four feet tall, weighs in at about 165 pounds, and has a frequency response specification of 28Hz to over 25kHz. The **Auditorium Neo** ($140,000) is 6' 8", tips the scale at more than 500 pounds, and operates from 16Hz to more than 25kHz. Apogees were notorious for their challenging impedance characteristics; not so with the Clarisys Auditorium model, where even the treble panel doesn't dip below 3 ohms. Both models—the Auditorium in a large space and the Minuets in a typical hotel guest room—manifested pretty much limitless dynamic range, subterranean bass, and realistically precise imaging. This is a brand that will be going places on this side of the Atlantic.

The busiest place at the Florida International Audio Expo (other than the bar, of course) was the **TAD** room. Shinji Taratumi, now CEO of Technical Audio Devices Laboratories, was visiting an American audio show for the first time and, throughout the weekend, recording engineers Jim Anderson and Ulrike Schwarz gave presentations related to their roles in the production of Patricia Barber's latest album, *Clique!* TAD had two systems set up in one big space, one with the flagship **Reference One TX** loudspeakers ($160,000) and the other showcasing the brand-new **CE1TX** stand-mount ($35,000/pair with stands). The latter were punchy, powerful, and light on their feet, largely free of coloration when allowances were made for their being played in a room that may have been a bit too big to show the speakers off to their best advantage.

Triangle Arts' first loudspeaker, the MÉTIS Horn.

Coastal Source's 10.0 3-way Ellipse Bollard outdoor speaker.

Avantgarde Acoustics DUO GT loudspeaker.

Also debuting at the Florida show, courtesy of the Jacksonville dealer House of Stereo, was the **Avantgarde Acoustic DUO GT**, which represents just the second "generational" advance for the DUO in 30 years. An XT3 supertweeter has trickled down from the TRIO and a pair of XB12 bass drivers has made it over from the Spacehorn subwoofer to each DUO. There are actually two new products, an **active** version ($77,000) and a **passive** one ($61,000). To clarify, the bass modules are active with both, the woofer driven by an integral 1000-watt amp, but the active model has a single-ended iTron amplifier module built in that eschews negative feedback. Little power is needed, as the tweeter/midrange component of the speaker has a sensitivity of well over 100dB. Tonally, the speaker was quite neutral—no horn colorations in evidence to my ears—and there were excellent dynamics and low-end foundation with symphonic music.

Acora Acoustics, the loudspeaker manufacturer that famously fabricates its enclosures from granite (and, more recently, from quartz as well) launched in 2018 with three models that have remained the only purchase options to this point. CEO/designer Valerio Cora chose the Tampa show to introduce a new, larger speaker, the **VRC** ($220,000), a 3-way that stands about 52" tall and weighs in the neighborhood of 400 pounds. It will play as "big" as any physically larger and more complex loudspeaker you'd care to put it up against, and yet it has the footprint of, roughly, a Wilson Sasha. Its sonic performance can only be described as imperturbable—the stability of the image presented to the listener will not change one bit no matter how loud or complex the source material becomes. Remarkably, music's more intimate moments are also correctly scaled.

In the same system as the Clarisys Auditorium Neos were the soon-to-be-released **Shunyata Research Omega** speaker cables ($24,995 for a 2.5-meter pair). Designer Caelin Gabriel, explained that these are the company's new flagship speaker cables, surpassing in performance those in the Sigma range. Responsible are several of Shunyata's alphabet soup of technologies, including the distortion-reducing Zi-Tron and HARP methodologies

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Suncoast Audio of Sarasota is the first to import Clarisys full-range-ribbon Minuet Neo into North America.

ANDREW QUINT'S BEST OF SHOW

Best New Product (cost-no-object)

Acora Acoustics VRC loudspeaker. As good as anything I've heard anywhere. The price will put it out of reach for most but, for once, not the space requirements. The designer says 15' x 15' would be fine.

Best Sound (for the money)

Gershman Acoustics Grand Avant Garde 30th Anniversary loudspeaker. There actually were some products that everyone could agree were inexpensive and thus exceptional values—the $200 DAC from **Geshelli Labs**, for instance. Maybe I'm desensitized from listening to too many half-million-dollar stereos for three days, but these $17,000/pair loudspeakers feel like a real bargain to me. They produce prodigious bass and are unafraid of dynamic challenge. A true full-range speaker in a compact package.

Best Demo

Ted Denney of Synergistic Research

The man many audiophiles love to hate was in top form, demonstrating a range of SR products including grounding devices, acoustic dots, resonance generators, and plenty more. Whether you feel he deserves a tenured position in the Physics department of an esteemed university or a grand jury investigation, you need to see Denney in action. Personally, I've yet to encounter an SR product at one of TD's presentations that *didn't* affect the sound—and the change is usually for the better. It's at once disturbing and exhilarating, especially for hobbyists who haven't already concluded that everything they can hear requires a traditional "scientific" explanation.

Most Significant Trend

High-end speakers that can be rained on

I know it's just a mini-trend—there were only two exhibitors with loudspeakers designed for outdoor use—but who knows what will come to pass? **Focal** (its speakers were disguised as rocks) and **Coastal Source** (the company's tagline is "defy the elements") had products on display both inside and poolside, though the latter location didn't seem to be much visited. Audiophiles don't always do well in direct sunlight.

TAD's CE1TX stand-mount had its world debut at the Florida show.

and, especially, KPIP (the Kinetic Phase Inversion Process) that is said to obviate the need for cryogenic treatment or even cable break-in. I wasn't there, but when the Omega cables were substituted for a well-regarded Scandinavian wire that was certainly no bargain-basement item, the system's performance improved substantially.

Mostly, I consider headphone listening a necessary compromise for when setting up full-range floorstanding loudspeakers is inconvenient—say, on a two-hour airline flight. But I could definitely learn to love "personal stereo" if my point of reference was the **Warwick Acoustics Aperio Black** ($36,000), a limited edition of just 50 sets of headphones. The transducer is a "Balanced-Drive High Precision Electrostatic Laminate" (BD-HPEL), and the headphones come with a full-feature preamplifier that includes dual-mono 32-bit/385kHz DACs and pretty much every analog and digital input interface you could think of, as well as their own flight case. On Alan's recommendation, I listened to "Kathmandu" from the Dave's True Story *Unauthorized* album. Rarely have I felt such an immediate musical connection to an unfamiliar song as with these elite 'phones.

Spinning the LPs in the capacious ballroom hosting the new Acora loudspeakers was a new **Oracle** turntable, the **Delphi Mk 7** ($13,900). It takes a lot for this 44-year-old Québec manufacturer to advance a version number but, after 13 years of incremental

What do 22 of AXPONA's most exciting exhibitors have in common?

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improvements, they felt they had to. Director of Operations and product designer, Jacques Riendeau reviewed with me a dizzying list of changes involving motor, power supply, driver electronics, platter (it's a two-piece affair), and bearing. The price seems almost perversely low, given how long the 'table has been around, and the increasing number of far more expensive record players that are out there. Fitted with the **Reed 1H** 9.5" tonearm ($3750) and a **Lyra Atlas Lambda** cartridge ($11,995), the Oracle's spatial presentation and pitch stability was as unwavering as a digital source.

JV's comprehensive review of the **United Home Audio Ultima 5** tape deck ($38,000) is printed in this issue, but the machine got its first public demonstration at the Florida International Audio Expo, with designer Greg Beron at the controls. Beron played a mouth-watering selection of 15ips reel-to-reel tapes that, I sensed, had much of the mesmerized crowd in a darkened room wondering if this was the *only* way to fully appreciate the analog medium.

Triangle Art got its start building no-compromise turntables (and it's still at it, to say the least), but they also manufacture gorgeous electronics. Getting its first North American hearing after a Munich debut last spring was the striking **METIS horn loudspeaker** ($59,000), the company's very first. Perched atop a sturdy bass enclosure (a single 15" Acoustic Eloquence woofer lives inside) is a sensual solid walnut horn, driven by a 6.5" Beyma cone. A RAAC ribbon takes the treble out to 60kHz. With 95dB efficiency at a nominal 8-ohm impedance, it's an easy load for pretty much any amplifier. With familiar material, I heard a slight "cupped hands" sort of coloration, but the ease of the musical presentation was undeniable.

The affable Ozan Turan, with a portfolio of audio products that is imaginatively curated and always evolving, was playing a super-system detailed below. New to the U.S. was a line of silver monocrystal cables from the Polish company **Albedo**. Those in use at the show included the **Metamorphosis Signature XLR interconnects** ($7250 for a 1m pair) and the **Metamorphosis Mk II speaker cables** ($10,000 for a 1m pair). The company manufactures the products from scratch, smelting the silver and extruding the wire themselves.

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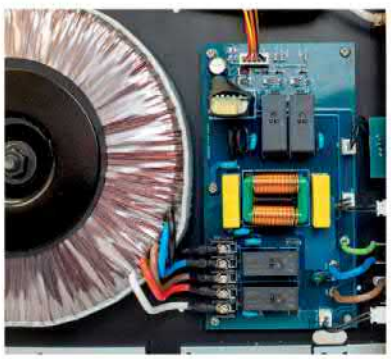

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NOTHING SUCCEEDS LIKE EXCESS. These five systems, all but one presented in large spaces on the hotel's main floor, were all "reference quality" yet they were quite different from one another. The most ambitious—some might say over-the-top—rooms at the Florida International Audio Expo gleefully provided equipment lists, with the associated expenditure, down to the last interconnect. Fully reproducing them would not only take up an inordinate amount of space, but also emphasize cost over sound quality. So please settle for some aggregate prices. And dream on.

Kennedy Meeting Room: High End By Oz. Lansche Audio No. 5.2 loudspeaker ($49,500) **+ Thrax Audio Reference Series electronics** ($221,920) **+ Thrax Audio Yedre/Schroeder/Trajer analog** ($30,000) **+ S.I.N. Audio power reconditioner/power cables + Abbedo silver monocrystal cables + HIFISTAY racks/Spikes/Footers/Vibration control.**

Lansche speakers utilize that rarest of transducers, the plasma tweeter, that covers the frequency range from 1500Hz to a lofty 150kHz. Though the plasma driver needs to be cleaned once a month, Oz Turan promises it will last for 15,000 hours. With Thrax electronics connected with Albedo cabling, the system manifested remarkable speed and timbral accuracy. On "Bird on a Wire" from *Famous Blue Raincoat,* the exposed triangle was presented as a small and precisely localized sound, clearly audible in the company of bigger, louder instruments; Jennifer Warnes' voice was at once pure and richly characterized. Orchestral weight and dynamics were totally satisfying.

Suncoast Audio (Room 915). Clarisys Audio Minuet Neo panel loudspeaker ($33,800/pair) **+ Hegel electronics** ($27,990) **+ Aurender N200 streamer + Rega analog** ($5740) **+ Shunyata cables.**

Those unfamiliar with the Clarisys brand, such as myself, got to hear two models in the manufacturer's product range, and it was the smaller of the two that made the better impression and in a smaller room. Bass was authoritatively deep and articulate and, with my chronic orchestral reference selection (the Haitink/Concertgebouw recording of Shostakovich's Symphony No. 15), the opening glockenspiel notes were stunningly precise. The hard-hitting rock virtuosity of the band Polyphia, on a track called "Playing God" that was requested by another listener, registered at a very visceral level. Everything I heard played through this system was, at once, involving yet nonfatiguing.

Tampa Terrace: MBL North America. MBl 101E MkII loudspeakers ($91,000) **+ MBL electronics/CD transport/DAC** ($228,260) **+ United Home Audio Ultima 5 tape deck** $36,000) **+ Wireworld eclipse cables**

It may have been an exceptional run of bad luck, but I've never heard MBL speakers sound good at an audio show—not with their own electronics or anyone else's. They were usually played at assaultive levels, and the widely praised spatial characteristics weren't evident. This time, corporeal images hung in the air disconnected from the devices that created them. Correct scaling of instruments was maintained, as with the Anthony McGill/Gloria Chien clarinet and piano recording (Cedille Records) that I played throughout the show. Dynamic nuance was impressive.

Westshore Ballroom: Acora VRC loudspeaker ($220,000) **+ VAC Statement electronics** ($310,000) **+ Oracle/Reed/Lyra analog source** ($29,665) **+ Aurender/Lampizator/Oracle digital source** ($118.920) **+ Cardas cables.**

Nearfield listening was rewarded, a sure sign that this system would succeed in many real-world domestic applications.

Val Cora wrangled the finest ancillary components he could get his hands on and again paid top dollar to secure the biggest space at the Tampa show. He deployed dozens of pillows on a ledge near the 30-foot ceiling to tame a reflection problem—all to assure that his new loudspeaker would make the best possible impression. Cora seemed exceptionally motivated to guarantee that anyone who set foot in his room would have a transformative experience. The chair in the middle of the first row of the listening area was marked "Private Concert" with a piece of tape, and Cora took all the musical requests that I witnessed sent his way. Listeners, I think, grasped that this was a true assault on the state of the art and tended to stay a while. The system was utterly unfazed by orchestral or rock cataclysms and the dimensionality of the sound field was mesmerizing. The price of admission is very steep but Cora maintains, could actually work in a smaller, more typical domestic setting.

Bayshore Meeting Room. TAD CE1TX stand-mounted loudspeakers ($35,000) **+ TAD electronics** ($78,500) **+ Wolf Audio Systems server** ($10,000)

The less imposing of the two systems assembled by TAD, which featured the manufacturer's new stand-mount loudspeakers, impressed me more than the one including the considerably more massive (and expensive) flagship transducers—it was more agile and transparent without giving up all that much low-end weight and dynamic power. Nearfield listening was rewarded, a sure sign that this system would succeed in many real-world domestic applications. tas

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The Geometry of the Orchestra

Why Do Orchestras Sound Odd in Stereo?

Robert E. Greene

It is a commonplace to say that the reproduction of the sound of a full symphony orchestra is one of audio's biggest challenges. The dynamic range is large. So is the frequency range, although, unless a pipe organ is involved as a supplement, that range does not go all the way down in terms of fundamental frequencies. The multiplicity of instruments (a full orchestra typically contains at least 90 players), the number of independent lines that can be playing simultaneously, the complex textures created by many players playing the same lines, the variety of tone colors, and the importance of similarities and contrasts among them all add up to a complex sonic picture that is hard to reproduce. The picture is so complex that it can seem almost unbelievable that anything resembling it can be produced by only two speakers. We are lucky it works as well as it does. And it really does work well. Recording media can deal with the frequency extension and dynamic range, electronics have evolved to the point that intermodulation distortion is low enough to preserve the textures, and loudspeakers are available that can handle the full frequency range and dynamic range that are required. Even relatively inexpensive speakers can deliver the power of the orchestra dynamically: I think of my Cerwin Vega CLS-215s. Even such extreme levels, far above general orchestra levels, as Scriabin tuttis, which can hit 100dB+ in the seventh row—as I have actually measured in concerts— are not a problem. And the bass is covered all the way down, too. Exact timbres still tend to be an issue—the ear is so sensitive to distinctions there. But overall, stereo systems work pretty well.

Except for one thing. And this one thing is what I want to talk about here. To summarize: Orchestras are huge. On home stereos in rooms of domestic dimensions, orchestras are reproduced at a fraction of their size, almost without exception. Home stereo can be loud enough, and it can cover the whole frequency range, but the orchestra at home is too small in geometric terms. This is supposed to be handled by the concept of the "soundstage," but in practice the "soundstage" is not large enough in domestic stereo playback.

Home orchestral reproduction is too small. Much too small. And it is too small in both width and depth. When you walk into a concert hall, the first thing that will strike you, even with the orchestra just warming up, is that the sound is BIG in capital letters. Not individual instruments but the ensemble, and the hall even more so. Wide open spaces are in evidence.

By the Numbers

Let's get specific. How big is an orchestra anyway? A full orchestra is undernourished at 75 players. Ninety to one hundred is more like it for big pieces like Stravinsky's *Rite of Spring* or Strauss' *Ein Heldenleben*, or Mahler's symphonies, or Respighi's *Pines of Rome*, or any of the orchestral music of the late Nineteenth Century onward.

Naturally, that many performers take up some space. How much space? A reasonable and appropriate size is around 50 by 35 feet. Much smaller and things are really cramped! (To bring this down to the personal level, the orchestra I play in, which numbers around 90 when we do the big pieces, was really shoehorned in on occasions when we had had to play in a space 40 feet wide and 25 feet or so deep. We really needed another ten feet both ways.) Big orchestras in general try to play in spaces with quite large stages, although if the orchestra is too spread out, ensemble can suffer. Circumstances vary, but according to Beranek's book *Concert and Opera Halls: How They Sound*, older halls average just short of 50 feet in width and about 35 feet in depth for the stage space occupied by the orchestra. Modern halls tend to have somewhat larger stage space for the orchestra.

This is supposed to be handled by the concept of the "soundstage," but in practice the "soundstage" is not large enough in domestic stereo playback.

Of course, there are special pieces where much larger ensembles (geometrically and numerically) are in evidence. Mahler's Symphony No. 8., the "Symphony of a Thousand," usually makes do with four or five hundred players and singers.

But let us stick with the more usual scale of halls and sizes of orchestras—50 feet by 35 feet as a reasonable but not extreme standard.

The Geometric Picture

Harry Pearson, late and much-lamented co-founder

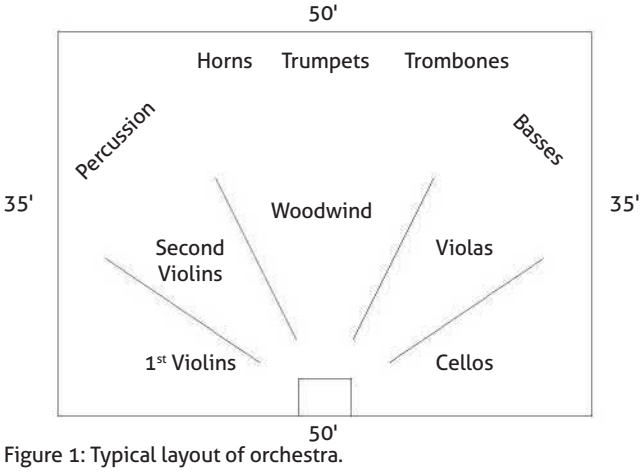

Figure 1: Typical layout of orchestra.

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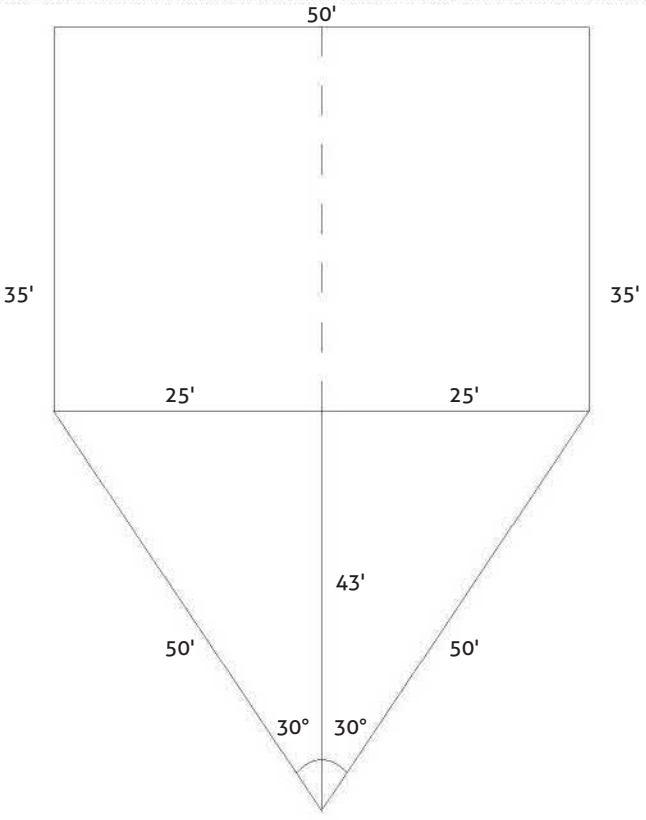

Figure 2: 60° perspective, total angle 60°, distance to back of orchestra more than 75'.

of TAS, used to say that we (reviewers) ought to go to symphony concerts and listen to the orchestra as if it were a stereo system—to get some sort of mental calibration standard. So, let us take him at his word and ask ourselves first: How far back do we need to sit to get the orchestra inside the 60-degree angle that is regarded as a standard for stereo speaker placement (i.e., 60 degrees separation of the speakers as viewed from the listening position)?

The answer (from Euclidean geometry of more than 2000 years ago!): If the orchestra is 50 feet wide and you have a center seat, your seat needs to be 25-times the square root of three feet behind the front center of the orchestra, where the conductor stands. This is a few inches over 43 feet. The back of the orchestra, where the brasses sit is then more than 75 feet away (Figure 2).

Now we should pause here for a moment of soul searching. Have you ever encountered a home-audio system in a room of ordinary domestic size where images in the usual sense of precisely located perceived positions were 75 feet away? My own answer is no. I imagine yours is, too. But things are not quite as desperate as they might seem, since the auditory perception of depth, in live sound, tends to become somewhat indefinite with large distance, as we shall discuss later. There is hope.

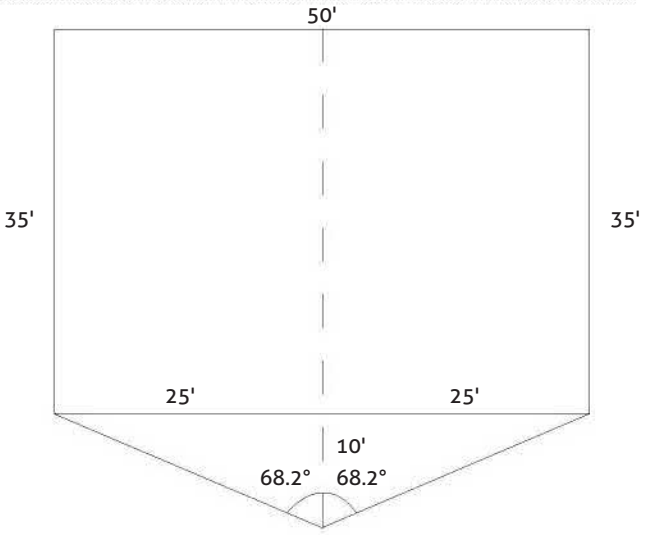

Figure 3: Angular width at 10 feet. Total angle 136.4, distance to back of orchestra 45'.

Now, let us switch the viewpoint around. Suppose that you sit ten feet from the midpoint between your two speakers so the plane of the speakers, which is usually pretty much the front of the stereo "soundstage," is ten feet away. How far do the speakers need to be apart in order to cover the angular size of the orchestra as you would hear it live, if you were ten feet behind the front center of the stage, where the conductor stands? The answer involves a little trigonometry. The angle mathematically is 2 arctangent (25/10). This is 136.4 degrees. That is more than twice as wide as the usual 60-degree separation of stereo speakers! And there is a further difficulty. The back of the orchestra is still far away—ten feet plus whatever the physical depth of the real orchestra was. So, we are still in need of images that are *way* back—something like 45 feet would be a likely figure (Figure 3).

The auditory perception of depth, in live sound, tends to become somewhat indefinite with large distance.

The Blumlein Standard

It is interesting to see how all this fits in with the theoretical idea of Blumlein stereo recording and playback, in which the microphone pick-up is a single pair of crossed figure-eight dipole microphones (called a coincident pair) located in one position (as nearly as possible). In this setup, the ensemble being recorded needs to fit in a 90-degree angle, ±45 degrees from the central axis of the microphone pair. (Outside this angle, one of the microphones is in reverse polarity relative to the other until one gets all the way around to the backwards-pointing 90-degree sec-

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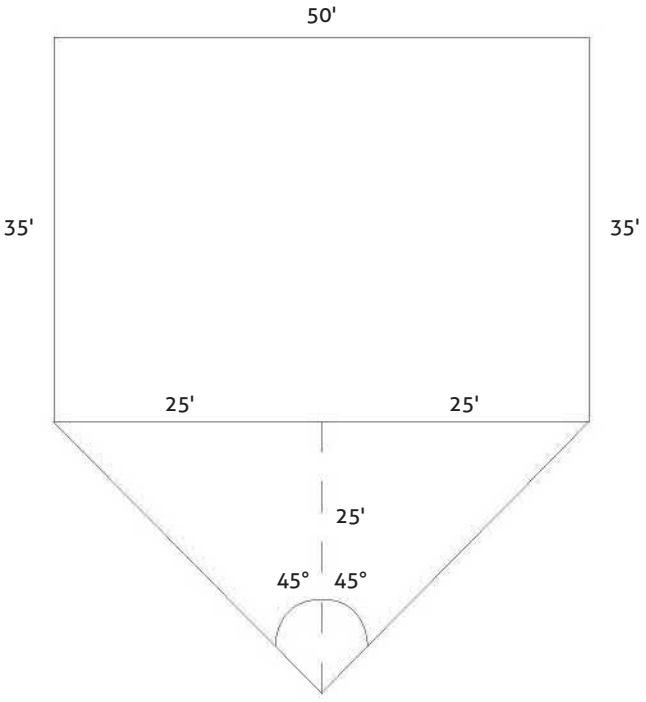

Figure 4: Blumlein view, total angle 90°, Blumlein microphone position

tor.) So, if the orchestra is 50 feet wide, the microphone needs to be back 25 feet from the front of the orchestra, 25 feet behind the conductor. In practice, one can shade this a little bit and be back say 20 feet, since the extreme edges of the orchestra contribute rather little to the overall sound (Figure 4).

These 25 feet are actually pretty much the usual distance used in Blumlein orchestral recording. For instance, the Waterlily Philadelphia Orchestra recording (WLA W66 CD) had the microphone pair back 20 feet and up 12 feet, for an effective distance from the conductor's podium of 23½ feet. This is a considerable distance compared to the microphone distances used in usual orchestral recordings, which are often quite closely miked. Even recordings that are not heavily multimiked often have the microphones closer than 25 feet, and this has always been the case, even in the "Golden Age" of early stereo (cf., for instance the diagrams of the RCA Shaded Dog recording microphone positions in Michael Gray's historical article in Issue 49, 1987). There are not too many microphones, but they are still much closer than 20 to 25 feet from the nearest instruments.

The theory of Blumlein stereo in terms of vector reconstruction of wavefronts calls for 90-degree separation of the speakers in playback, already considerably wider than the conventional 60-degree separation. But a famous paper of Clark, Dutton, and Vanderlyn, published in the early years of commercial stereo (1957 Proceedings of the Institute of Electrical Engineers [phaedrus-audio.com/stereosonic.pdf]), showed experimentally that to get the position of the sources audibly correct in angular terms the speakers needed to be 120 degrees apart! It is thus somewhat mysterious how 60 degrees—the equilateral triangle position, that is—became a nominal "standard" for stereo speaker placement, since this makes the images far too bunched together and the lateral extent nowhere near large enough. The equilateral triangle standard squashes the orchestra together angularly, side to side, by a factor of two!

This strongly suggests that one should experiment with separating your speakers by a larger angle if you want anything like geometric realism.

The Depth Issue

Lateral localization, our sensing of the horizontal direction of the sound sources, is quite precise and is determined by the direct arrivals at our two ears almost entirely (as in the paper of Clark et.al. already referred to and in Blumlein's original theory and in accord with what is known as the "precedence effect"). But depth perception of sound is somewhat less direct for sources that are not really close to the listener. At very close range, the ear/brain detects in effect the curvature of the wavefront emanating from the source. But at anything like real-life distances for concert sound, this effect has faded out and the perception of distance depends on other aspects of the sound. In particular, a good deal of depth perception depends on knowing what the sound being heard is like by nature. Knowing this enables the ear/brain to observe how loud the sound heard is compared to the nature of the presumed sound emitted by the source—voices that are softer sound farther away, for example. There are also timbre shifts associated with distance (e.g., loss of "presence"—hence the expression). And there is also the fact that distant sounds are usually accompanied by more reflections and, in enclosed spaces, by reverberation.

Even in a mono AM broadcast, there is an immediate sense that one is now in a big place and that the crowd is large and far away.

These effects, in general terms, can be quite robust. Think of how the sound changes when a sports broadcast switches from announcers in a studio to the announcers in a stadium. Even in a mono AM broadcast, there is an immediate sense that one is now in a big place and that the crowd is large and far away. But more detailed aspects of depth and size perception are more delicate, and preserving them in recording and playback is more difficult. Still, the cues that generate the perception of depth are, in principle, recordable. But they are not always recorded in practice! A close-miked instrument or voice will typically have lost much of the audible information that would have given one cues as to how far away it is in reality. But even if the cues are recorded, they are often obscured upon stereo playback via speakers, because of things the speakers themselves are doing in the listening room.

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The Playback Problem

German psycho-acoustician Gunther Theile pointed out emphatically, many years ago in his Gestalt analysis of stereo perception, that in theoretical stereo the perceived positions of sound sources are independent of the front-to-back position of the speakers. Only the angular separation of the speakers is supposed to count. But in practice, as opposed to this theoretical situation, the front of the "stereo stage" is essentially determined by the plane of the speakers. And this is a sign that stereo playback is not working as it should. Similarly, why should the position of the wall behind the speakers have anything at all to do with the perceived depth of images? Or the position of the sidewalls? The idea of a "soundstage" filling the space at and behind the speakers is, in effect, proof that stereo information is not being processed correctly.

What is supposed to happen instead is that the front-to-back position of stereo images should vary depending on how close the sources were to the microphones that recorded them. A source recorded with a mono microphone at close range should appear on playback to be very close to the listener: No depth information is recorded, so the reproduction should not be heard as far away. But something like an off-stage trumpet-call miked from a hall position should appear far away, in effect indefinitely far away. And everything in between these two extremes should be reproduced, depending on the recording. A solid sonic space bounded in front by the plane of the speakers really has to be an artifact of room reflections and speaker misbehavior, in contrast with the ideal, that the front-to-back position of images would be independent of the distance of the speakers from the listener and should depend only on the speakers' angular position.

Where do these odd and really wrong stereo effects involving the boundaries of the room and the front-to-back position of the speakers come from? Partly, they come from diffraction effects in the speakers themselves, which tend to reveal the location of the speakers. But primarily they come from reflections off the playback environment. Early reflections are the cues that the ear/brain uses to locate the front-to-back position of the speakers, and this works well—even though one wishes it would not!

But this problem can be dealt with. MTM-configuration speakers (those with a vertical array of midrange-tweeter-midrange) already help to diminish the effect of floor and ceiling bounce, and line sources do so even more. And putting absorbing foam on the floor and ceiling first reflections will help a lot. Similar damping of sidewall reflections or the use of angled panels to direct the potential reflected sound away from the listener are other steps in the right direction. The ultimate form of this is the RFZ (reflection-free zone) room, but one can get a surprising amount of the same effect without going the full way to an RFZ environment. (In a real RFZ room, there is room sound but there is almost no early arrival of reflected sound—the room sound arrives after some considerable time interval.)

The effect of this is to reveal the depth cues that are recorded as completely as possible. This is quite a different thing from generating a sense of depth by using reflections arising from the listening room—different and better. But, of course, one must be prepared for the fact that many recordings, especially those with no real acoustic antecedent, will sound somewhat odd. One needs a concert record to get concert hall sound on playback!

Looking out over the ocean from a cliff edge or looking up at the night sky or contemplating grand scenic landscapes induces in us sensations that no scaled-down painting or photo does.

How to Deal with Life in Practice

Rescue a good dog would be my basic answer to that. But on the subject of audio, one needs, I think, to direct one's attention to what really ought to happen. There is no use in expecting recordings which contain no depth information to have depth, or recordings that are glued together from pieces to have a coherent sense of space, and so on. My idea is that one should forget the concept of trying to make the musicians sound as if they were in your room. This will happen (to the extent that it can happen) more or less automatically if the playback has correct frequency response. But what one ought to be worrying about is getting big spaces to sound big and the musicians to sound as if they are in those big spaces. To each his own, but this is the thing that makes sense to me. Most music is not really designed to be performed in a room of domestic size, and much of it sounds rather strange and unrealistic when presented as if it were, in such a small space.

So, experiment. Try putting your speakers far apart. Try damping early reflections, especially floor and ceiling. Try to get images to "float" front to back in positions independent of where the speakers are. And be sure that your speakers are not over-projecting things, tonally. A tonally forward speaker pair will collapse depth almost entirely.

And look for recordings that have captured a real sense of depth. Recordings made with a pure Blumlein microphone technique are typically good if the microphones are not placed too close to the musicians. The Paula organ recordings, for example, of the music of Buxtehude, were done in Blumlein stereo in churches and have spectacular depth if reproduced correctly (Paula PACD 68-73). So do orchestral Blumlein recordings, though those are few in number (e.g., Sheffield and Water Lily). The Reference Recordings from Minnesota—Eiji Oue conducting, Keith Johnson recording—are very convincing played back the right way. The Opus 3 sampler *Depth of Image* (Blumlein again) is intriguing. Track 13 of the Telarc Ravel-Borodin-Bizet CD 80703 gives a conspicuous example of distant versus direct trumpet sound and of how depth cues can work. But you can make your own list. Experiment to make such recordings work in your system. And then you will be on the

road to making all recordings sound as realistic as they can. And be sure to keep in mind that wide speaker separation is a key ingredient toward reproducing an orchestra with the correct sense of size.

Perhaps most of all, keep in mind, that while depth is inferential and indirectly presented, and hence sensitive to small changes, still it is primarily affected by acoustic factors. Some foam on acoustic reflection points will have quite a large effect, typically larger than electronic changes.

Is It Important After All?

A sense of the spatial scale of music might not seem, at first, central to musical experience. But without minimizing the importance of all the other aspects of musical sound—timbre, pitch, dynamics, and dynamic inflection, clarity of lines and correct blending of them, and all the other things that are important in orchestral sound—I would suggest that spatial scale plays a perhaps unexpectedly large role in orchestral music. Indeed, my impression is that, leaving aside peripheral emotional matters (the excitement of actually being there and so on), the lack of physical spatial scale is one of the main sources, perhaps *the* main source, of the frequently expressed feeling that live concert music is fundamentally different from playback in the home. There are other differences: Concert-hall sound has far more diffuse-field content than home stereo, for instance. But the small perceived size of the reproduced orchestra makes a big difference in a negative direction from the live experience.

Without minimizing the importance of all the other aspects of musical sound, I would suggest that spatial scale plays an unexpectedly large role in orchestral music.

The effect of size upon the human psyche is not restricted to music. It seems to be built into us. Looking out over the ocean from a cliff edge or looking up at the night sky or contemplating grand scenic landscapes induces in us sensations that no scaled-down painting or photo does, no matter how truthful they may be to the beauty. Spatial scale is not directly a part of the conception of music as such, but it is definitely a vital part of the experience of orchestral music, and its absence separates us from the full glory of the live event. But if we try, we can get much of the glory back. tas

Acknowledgment: I am indebted to James Croft for his helpful comments and encouragement in the preparation of this article.

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Ortofon MC Diamond Cartridge

Is Ortofon's New MC Diamond "The Ultimate Phonograph Cartridge"?

Michael Fremer

At Munich High End 2022, Ortofon introduced the MC Diamond, the company's latest top-of-the-line "Exclusive Series" moving-coil phono cartridge. Ortofon abandoned its usual reserved Scandinavian demeanor and pronounced the MC Diamond "The Ultimate Phonograph Cartridge." That was a new approach, at least to Ortofon's marketing.

Not including mono and SPU variants, the MC Diamond is by my count Ortofon's ninth SLM-bodied cartridge, which, simply put, laser-welds together, layer-by-layer, powdered metal micro-particles. Ortofon mostly uses titanium, which has effective self-damping properties when formed into the cartridge shape with internal reinforcement structures. (SLM is an initialism for "Selective Laser Melting.")

Ortofon's first SLM cartridge was the MC A90 introduced in 2008 to celebrate the company's 90th anniversary. At that year's High End Munich show in the private meeting space behind the company's exhibit, Leif Johannsen, Ortofon's Chief Officer Acoustics and Research, took an A90 body out of a box and placed it in my hand.

The A90 didn't look like a phono cartridge. It featured a radical, "minimalist" body impossible to produce using traditional "carve-away" CNC machining. More than just "cool tech," the new SLM process produced a rigid, compact, dense, one-piece, resonance-reducing structure into which all essential components could be shoehorned, leaving no room to spare. If less is more, this was definitely less, which proved to be more.

The A90—limited to 400 units—featured a boron cantilever to which was attached Ortofon's large-contact-surface Replicant 100 stylus. Many of the cartridge's new mechanical and electrical features were also found in the then newly introduced MC Windfeld, including the Replicant 100 stylus, but the A90 sounded nothing like the Windfeld, which Johannsen had designed as a tribute to the then recently retired Ortofon engineer Per Windfeld.

Mr. Windfeld is responsible for many innovations used in earlier Ortofon cartridges that Johannsen also incorporates in his new designs. The original Windfeld's body was of a non-SLM stainless-steel and alloy mix. The sound it delivered was far more relaxed than the A90's. If the A90 was a tightly sprung sports car, the Windfeld's sonic performance was more "sedan-like."

Johannsen took me onto the 2008 convention-center floor and dropped from eye level a small ball of a newly developed elastomer used in the A90's suspension. It hit the hard floor and stopped. Afterward, he introduced me to Ortofon's CEO Christen Nielsen who asked me if I thought this burgeoning vinyl resurgence was real or just a fad-produced bubble. I told him I thought it was real but admitted neither I nor anyone I knew could be sure.

I reviewed the A90 and bought it. I consider it a breakthrough design classic, and I still love its sound if correctly set up: fast, nimble, clean, and detailed. At the time, I didn't know that Mr. Nielsen was one of several private investors who, in 2004, had purchased Ortofon. He and the others had a lot of money riding on the bet that the vinyl resurgence was real.

It was a bet, also unbeknownst to me, that they were hedging. Who could blame

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Specs & Pricing

Output voltage: 0.2mV at 1 kHz, 5cm/sec.
Channel balance: 0.5dB at 1 kHz
Channel separation: 25dB at 1 kHz
Channel separation: 20dB at 15 kHz
Frequency response: 20Hz–20kHz +/-2dB
Tracking ability: 80µm at 315 Hz at recommended tracking force
Compliance: 11µm/mN dynamic, lateral
Stylus type: Special polished Nude Ortofon Replicant 100 on diamond cantilever
Stylus tip radius: r/R 5/100µm
Tracking force range: 2.5–2.8g (25–28mN)
Tracking force, recommended: 2.6g (26mN)
Tracking angle: 23°
Internal impedance: 6 ohms DC resistance
Recommended load impedance: >10 ohms
Coil wire material: Ultra-pure oxygen-free copper
Cartridge body material: SLM titanium
Cartridge weight: 17.5g
Price: $9999

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Power amplifier: darTZeel NHB 468 monoblocks
Phono preamplifier: CH Precision P1/X1PSU, VTL TP- 6.5 Series II Signature, Ypsilon VPS-100, MC-26LS SUT
Cable and interconnects: AudioQuest Dragon & TARA Labs The Zero Evolution & Analysis Plus Silver Apex & Stealth Sakra and Indra (interconnects). AudioQuest Dragon and Dynamic Design Neutron GS Digital (A.C. power cords)
Accessories: AudioQuest Niagara 7000 (line level), CAD Ground Controls; AudioQuest NRG Edison A.C. wall box and receptacles, ASC Tube traps, RPG BAD, Skyline & Abffusor panels, Stillpoints Aperture II room panels, Stillpoints ESS and HRS Signature stands, HRS XVR turntable base, Thixar and Stillpoints amplifier stands, Audiodharma Cable Cooker, Furutech Record demagnetizer, Orb Disc Flattener, Audiodesksysteme Vinyl Cleaner Pro X, Kirmuss Audio KA-RC-1 and KLAUDIO KD-CLN-LP200T record cleaning machines, full suite WallyTools

them? The company had branched out into other fields, leveraging its miniature mechanical and elastomer expertise into related fields that were not time or fad sensitive.

Ortofon's Microtech division, around since 2010, specializes in micro-mechanical manufacturing, bone conduction technology, and elastomer research and production, much of it for the hearing-aid industry—a very useful B2B business it first established in 1985 that helped diversify the company when it seemed that the cartridge business would soon shrivel. Obviously, elastomer and micro-mechanical R&D are also useful for cartridge design.

While audiophiles are most interested in Ortofon's top-of-the-line, hand-built mc cartridges, DJ models continue to be a significant component of the company's annual sales of approximately a half-million cartridges. Many of the rest are inexpensive, automated-assembly, home-consumer-oriented cartridges like the OM and 2M moving-magnet series, many of which are sold OEM to turntable manufacturers. The "luxury goods" hand-built, high-tech cartridge business is a fraction of Ortofon's annual sales numbers, but it's the center of both innovation and brand-name status creation and recognition.

In 2013 Ortofon introduced MC Anna—a then top-of-the-line, costly ($8924), SLM-based cartridge featuring a boron cantilever/Replicant 100 stylus assembly and a polymer-based non-magnetic armature that eliminated magnetic field distortions produced by magnetic-armature movement within the gap. Named as a tribute to operatic soprano star Anna Netrebko, the MC Anna's tonal balance was smooth and neutral from top to bottom, with, I wrote in a review, only a slight but broad nudge in the lower mids and upper bass. Better for classical than rock I thought, but positively addictive. I bought that one, too.

To celebrate its 95th anniversary, Ortofon introduced at the 2015 Consumer Electronics Show (remember CES?) the $6499 A95, which took the basic A90 body-construction concept to another performance level, improving upon everything the A90 accomplished in part by using a new motor design featuring a low-magnetism armature made possible by the development of a new alloy. The new material reduced the need for Ortofon's FSE (Field Stabilizing Element) technology designed to minimize magnetic-field distortion—the FSE simply had less to do.

Again, wherever it was that I met Mr. Nielsen (might have been at AXPONA), he asked if I thought the vinyl resurgence was real and going to continue. I told him I thought

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so, but this time with greater certainty, as by then record sales were exploding and turntables and records had become mainstreamed and cool, thanks partly to Record Store Day. Pepsi ran a turntable-centric ad during the 2014 Superbowl. Turntables were showing up everywhere in advertising.

The A95, priced thousands below the Anna and limited to 500 pieces, hung more sonic meat on the A90's bones (sorry, vegetarians) and dynamically and timbrally improved upon the A90's already impressive performance.

MC Windfeld got an SLM titanium/stainless-steel body update in 2017 and became the Windfeld Ti, featuring a new motor design almost identical to the A95's, though retaining much of the original Windfeld's relaxed, somewhat soft, and very pleasing sonic personality. What it lacked in "slam" and excitement was more than compensated for by its ability to sound good playing back just about everything. No wonder SME pairs it with its Synergy "plug 'n' play" turntable with built-in Nagra phono preamp and sent one pre-mounted on the Model 60 turntable I reviewed in Issue 333. When first introduced, it cost under $4500. Today's price is $5159.

A year later, in 2018, to celebrate its 100th birthday Ortofon introduced Mr. Johannsen's MC Century—a limited-to-100 edition that incorporated every design "trick" in Ortofon's book, including an SLM titanium body and, for the first time, a diamond cantilever/Replicant 100 assembly. It was like an MC Anna on steroids but made more linear and top-to-bottom fast and timbrally balanced, no doubt in part thanks to the diamond cantilever. The MC Century had sonic weight, body, and drive.

Quick aside: I was honored to be invited to deliver a speech at the 100th anniversary celebration in Denmark and chose a lighthearted approach emphasizing vinyl's continued growth, using an image- and video-rich PowerPoint presentation rather than something tech-heavy. Among the quotes I put up on screen was "Compact discs are not the future. They don't sound better than records and soon very few people will still have CD players."—MF 1984 (in *Music Connection* magazine). It took many years for that prediction to come true, but it has.

As I remember it, most of the presentations, delivered by professors and researchers, were technical and dry, with many having to do with Ortofon's elastomer and micro-mechanical business. Hardly the fun hot spot. I worried that mine was way out of place and inappropriate, but it delivered important information about the vinyl resurgence and got the laughs from the audience I'd inserted into the script. Afterward, I asked my hosts if it was okay, and they told me it was just what was needed to keep sleepy heads awake. Whew!

In advance of Munich High End 2019, Ortofon announced the introduction of the MC Anna Diamond, a new "flagship" cartridge with no production-number limitations. It was the successor to the MC Century and sold for $10,499. It sounded and was constructed internally very much like the MC Century, with all its dynamic power and other attractive sonic qualities but with a somewhat lighter and faster touch, and it was clearly more linear than the original Anna, which remained for a short time in the Ortofon lineup.

If you've grasped the well-reasoned release pattern between the A90's 2008 introduction and the Anna Diamond's in 2019, what Ortofon did next under Leif Johannsen's tech leadership should be obvious. Next up would be a less costly cartridge fitted with a diamond cantilever, and in 2021 Ortofon did that by introducing the $6999 MC Verismo, priced between the Windfeld Ti and the Anna Diamond. COVID-19 got in the way of a live North American debut, so it was done on Facebook. I interviewed Johannsen about the Verismo on my previous endeavor's YouTube channel: youtu.be/3E9CkCSCS2E.

The Verismo's SLM-produced shape reprises the A95's "platform shoe" look, only built for larger feet. In addition to the diamond cantilever and Replicant 100 stylus, among the features the Verismo shares with the A95 and Windfeld Ti are a neodymium-based magnet system and the previously described, still magnetic (but less so) metal-alloy armature. Its suspension, though, was new and made use of a then recently developed rubber compound based on "Multi Wall Carbon Nanotubes (MWCNT) highly efficient nano filler," which Ortofon claims "offers desirable mechanical properties, which ensure better damping and improve the overall performance of the cartridge." (Carbon nanotubes [CNTs] are cylindrical molecules that consist of rolled-up sheets of single-layer carbon atoms (graphene). They can be single walled [SWCNT], with a diameter of less than 1 nanometer, or multi-walled [MWCNT], consisting of several concentrically interlinked nanotubes with diameters reaching more than 100 nanometer.) I reviewed and bought the Verismo, as well! It's an all-around solid performer that sounds as its priced—between the A95 and Anna Diamond—and is especially great for rock and jazz.

Ortofon had reached a new technical and musical peak with the MC Anna Diamond. And then? And then something unexpected happened—and it wasn't that the vinyl bubble burst!

Putin invaded Ukraine. Anna Netrebko's connection to Putin created controversy and boycotts, the details of which are not appropriate subject matter here, but clearly getting caught up in a political controversy was the last thing Ortofon needed. Who can blame the company for not wanting to talk about what was more a fanciful tribute than a contractual arrangement. Rather, Mr. Johannsen and company want to talk about something else.

The New MC Diamond

The new MC Diamond ($9999—a lower price than the Anna Diamond thanks to a more favorable currency exchange rate) shares a great many of the MC Anna Diamond's technical features and specifications, as well as its physical appearance. Among the shared specs: 0.2mV output, 0.5dB channel balance at 1kHz, 25dB channel separation at 1kHz, 80µm tracking ability at 315Hz, 6-ohm internal impedance, 23-degree vertical tracking angle, and recommended >10-ohm load impedance.

There are a few spec differences including 2dB less separation at 15kHz, and 0.5dB greater response variation between 20Hz–20kHz (±1.5dB for MC Anna Diamond and ±2dB for MC Diamond) but

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also 11µm/mN lateral dynamic compliance for the MC Diamond versus 9µm/mN for the MC Anna Diamond. The MC Anna Diamond recommended tracking force is 2.4g, the MC Diamond's is 2.6g. The MC Diamond at 17.5 grams weighs 1.5 grams more than the cartridge it replaces.

The cause of most, if not all these differences is the MC Diamond's use of a new in-house-developed elastomer suspension. Can you guess what it's made of? Right! Multi Wall Carbon Nanotube Technology (MWCNT). Ortofon habitually invents and uses initialisms. Another one is WRD (Wide Range Damping System) first used in 1979 in the MC 20 Mk II and subsequently used in the A90, Windfeld, Anna, Anna Diamond, and Century cartridges.

WRD sandwiches a heavy platinum disc between two rubber damper elements, each with different properties. The system is claimed to produce "exceptional tracking performance" as well as creating perfect damping through the entire frequency spectrum, said to virtually eliminate distortion and resonances. The new MWCNT compound is claimed to further enhance the 40-year-old innovation by more effectively optimizing the system's balance between compliance and damping.

Despite the seemingly minimal specification differences, the new elastomer system helps produce significant sonic differences between the MC Anna Diamond and the MC Diamond—easy enough to hear if, conveniently, one has both.

Those who've compared an original Lyra Atlas with the updated Atlas Lambda version fully understand that a shift in suspension materials and/or implementation can produce a fundamentally different sound in terms of timbral and especially textural balance. The Lambda update changed the sound of a cartridge some found "hard" and "analytical sounding," especially in the upper frequencies, into one that in the upper octaves is supple and delicate, yet detailed and highly resolving.

A cartridge "shootout" a few years ago between the Atlas Lambda SL and Ortofon Anna Diamond at Jacob Heilbrunn's grand listening space produced a consensus between the two listeners: me and industry veteran designer/manufacturer Peter Madnick. Using well-produced orchestral and small-combo jazz recordings, the Lambda SL tracking at 1.72 grams produced, body, bloom, spaciousness, textural and transient detail, and a profusion of rich instrumental colors—some of which the original Atlas failed to deliver. You didn't need to be told the brand and cost to know you were listening to exceptional cartridge performance.

The Anna Diamond tracking at 2.4 grams immediately made clear it was the spatial and imaging champ, producing startlingly holographic, naturally drawn, three-dimensional images on soundstages that were equally 3D. Boldly clarified back-of-the-stage reflections and proscenium boundaries appeared VR-like. With its large contact area and cutting-stylus-like geometry, the Replicant 100 delivered as promised. The overall presentation though was somewhat less dazzling, more muted and Scandinavian cool. Instrumental textures were very good but hardly lush. We both agreed though, given a choice, we'd want both. Conversely, we could live happily with either one.

MC Diamond, tracking at 2.6 grams is an evolutionary, not revolutionary product. The revolution was fought and won in the previously outlined Ortofon cartridges, all of which have, under Leif Johannsen's insistent innovation, evolved logically from Per Windfeld's pioneering work. In addition to the new suspension, Mr. Johannsen "re-jiggered" all the various elements found in Anna Diamond—in part to deal with the performance changes produced by the suspension—to produce a more refined-sounding cartridge with a richer textural and timbral palette and, I found, an even deeper spatial picture. Among the records I played using both the MC Anna Diamond and the new MC Diamond was the direct-to-disc Bruckner 7th performed live in concert with Bernard Haitink conducting the Berlin Philharmonic. It was Haitink's final performance and record-

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ing with the BPO, performed May 11th, 2019.

The spirited performance by an orchestra clearly in love with the conductor was perfect in its occasional imperfection (as you almost always hear live)—a brass "clam" here, a slightly off-kilter entrance there—but the recording using just five microphones, two for hall sound, is thrilling. The soundstage is enormous; the images are finely focused and solid and remain so even when the orchestra fires up full fortissimo. The massed strings never harden but have an honest edge and sheen. The cellos and double basses are felt as much as they are heard, and the brass, French horns, tubas, and especially the unusual-sounding Wagner tubas have a rich, burnished glow.

As I learned writing some listening notes for the box set, the hall was designed in the early 1960s, believe it or not, with home-audio enthusiasts in mind as stereo gained popularity and the designers realized most attendees would be more accustomed to "dry" acoustics. Instead of the reverberant "shoebox" presentation, the acoustician went for clarity and a relatively dry sound that puts the orchestra in great spatial relief within the space, especially since it's "proscenium free." The recording spreads the orchestra across the "hall" with almost alarming clarity, while also producing great stage depth. Instrumental separation by section and almost by instrument is intense but not at all artificial.

As effective as was the Anna Diamond's delivery of this spatial, timbral, and dynamic spectacular, the MC Diamond alleviated completely a slight string hardness and stridency without at all diminishing the desired sheen. Instrumental layering, especially front to back, was also improved, but most noticeable was the more subtle and tactile attack of the low strings digging in to provide rhythmic foundation, especially in the Wagnerian third movement and in the fourth playing pizzicato. Even though the hall has minimal reverberation, the recording does deliver the space, albeit subtly. The MC Diamond produced a more convincing backdrop around and behind the orchestra and overall, a more cohesive picture.

Consistently High Build-Quality

Cartridge build-quality variability even among the costliest has lately become a big issue. Revealing measurement tools demonstrate that consumers spending thousands, even ten thousand or more dollars often get poorly built cartridges that are difficult or even impossible to correctly set up for critical parameters like stylus rake angle (SRA), zenith angle, and azimuth.

I've lost count of how many cartridge setups I've done for myself, for reviews, and for other people. Arm parallel to the record often does not correctly set stylus rake angle, nor does head shell parallel to the record usually correctly set azimuth. Visual setups often result in higher levels of intermodulation distortion and inadequate channel separation and balance.

Ortofon delivers consistently high build-quality in its hand-built "Exclusive Series" cartridges and in lower-cost ones, as well—and not just in the ones it sends me for review! For instance, I recently set up for a reviewer a Cadenza Black on an SME Model 6 and, for a well-known rocker, an A95 on a VPI HW40. Both of those produced 92–93-degree SRA with arms parallel to the record and maximum channel separation and 0dB channel balance differential with the head shells parallel to the record surface. That's impressive.

The MC Diamond was equally well-built and met all specs that I could measure, including SRA, azimuth, and trackability. For $10k or more—or even for half that amount—you are entitled to high build-quality.

Conclusion

I realize this is an unusual review—more a product history and overview than a single product review, but I think it appropriate to examine this evolutionary cartridge in the context of what Ortofon has previously delivered at the top of its lineup under Lief Johannsen's direction. Besides, *The Absolute Sound* has fully reviewed most, if not all the cartridges covered here (as have I elsewhere), so between this synopsis and those easily accessed online reviews, you have the full picture. tas

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Lyra Etna Lambda Phono Cartridge

Think of It as an Etna II

Alan Taffel

Product names typically serve as unspoken code between manufacturers and buyers. A newly appended roman numeral, or one that's been incremented upward, indicates a new generation, with commensurately major upgrades. The signal to the user: You can expect a broad and substantial performance improvement. On the other hand, the use of a modifier in a new model name—unless preceded by the word "Reference"—signals small design changes and relatively minor (though still significant) performance improvements.

Lyra's Etna Lambda, the latest version of its acclaimed Etna cartridge, runs afoul of these normally reliable conventions. Here we have a cartridge that's been given the "Lambda" treatment—modest design tweaks—but the improvement is anything but minor. In fact, the Etna Lambda doesn't sound like an incremental upgrade at all; rather, it sounds like a whole new, spectacular cartridge.

Regular readers will recall that both Jacob Heilbrunn and I heaped praise on the pre-Lambda Etna. Jacob reviewed the SL (low-output), and I followed up with a write-up of the standard (normal-output) version. You can read those full reviews on the TAS website, but to summarize, Jacob gushed that the Etna SL delivers "transient precision, a blackness to the background, (and) a creaminess to the midrange that seems to suppress noise while widening the dynamic envelope." He also noted the cartridge offers a "layering of the soundstage, each instrument firmly located in its space rather than wavering, thereby adding a notable sense of verisimilitude to the proceedings."

I found that the non-SL Etna performed similarly, adding that its overall nature is "seductive" and concluding by stating that the Etna makes "musical magic." That's high praise. So high that it's hard to imagine the Lambda being better, let alone way better. But it is.

The first hint comes before music even starts playing—during the lead-in grooves. There is so much less groove noise, I found myself wondering if my tonearm's cueing system had gotten stuck in the up position. Nope. Instead, this silence turns out to be just one manifestation of the Lambda's absence of mechanical noise.

Of course, the real testament to what Lyra has achieved comes when the music begins. The reduction of noise from cartridge mechanics allows previously hidden *musical* mechanics to emerge. For instance, with the Lambda I can hear Bruce Springsteen's fingers brushing his guitar strings on "The Ghost of Tom Joad"—a previously obscured detail. The Boss' voice, too, is less prone to sibilance and generally more relaxed. Another big change I notice on this track: more powerful and incisive bass than you get from the pre-Lambda Etna.

The Lyrita LP of Moeran's Symphony in G Minor is another, very different showcase of where the Lambda Edition and the standard Etna part ways. The Lambda manages to maintain—and even reinforce—the innate lushness of the previous Etna, but it does so without adding any trace of heaviness. Images are even more solid and fleshed out than before. Meanwhile, timbres are more realistic-sounding, and the soundstage is notably deeper.

If that weren't enough, consider one more example, the famous *Royal Ballet Gala Performances* LP, originally on RCA Victor. Here, the strings, which are notoriously difficult to reproduce, show great gains. They are meatier, yet less shrill.

So how did Lyra achieve these feats? Primarily, through just two strategic tweaks. I can't describe the first of these as well as Lyra designer Jonathan Carr, so I'm going to quote him. "First, a bit of background that applies to both the pre-Lambda and Lambda Etnas. Ideally, a stylus should follow the shape of the LP groove and nothing else. But in a moving-coil cartridge, the pull between the coil armature and the magnet/polepiece, a pull that varies with the distance between those two elements, introduces a conflicting force. This force makes the movement of the stylus more erratic and less under the control of the LP groove.

"The typical method of counteracting this pull is to make the suspension stiffer. But while this does make the armature less likely to waver due to magnetic pull, it also makes the stylus harder to

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Absolute Analog Lyra Etna Lambda Phono Cartridge

Specs & Pricing

Type: Medium-weight, medium-compliance, low-impedance moving-coil cartridge
Stylus: Variable-radius line-contact nude diamond (3µm×70µm), slot-mounted
Cantilever system: Diamond-coated solid boron rod with short one-point wire suspension
Body: Machined titanium central core, anodized aluminum
Output voltage: 0.56mV @ 5cm/sec., zero to peak, 45 degrees (CBS test record)
Frequency range: 10Hz–50kHz
Channel separation: Greater than 30dB at 1kHz
Compliance: Approx. 12 x 10cm/dyne at 100Hz
Cartridge mounting screws: 2.6mm 0.45 pitch, JIS standard
Weight (without stylus cover): 9.2g
Recommended tracking force: 1.62–1.72g
Price: $8995

move, which can necessitate the use of higher VTF (vertical tracking force) and/or adversely affect tracking performance. Lyra feels that there is great value in keeping vertical tracking forces low (less wear to both the stylus and the LP), while prioritizing tracking ability (better performance and sound on more LPs).

"We therefore developed our New Angle technology, which is a mechanical preloading system that pushes the cantilever down towards the LP by a predetermined amount when VTF is *not* being applied to the cartridge. That way, the application of VTF causes the armature and front/rear magnets (we don't use polepieces) to become parallel to each other. Having the armature and magnets parallel when playing an LP significantly reduces pulling forces, making it possible for us to use a softer suspension, thereby achieving higher tracking performance without the need to impose high VTF requirements.

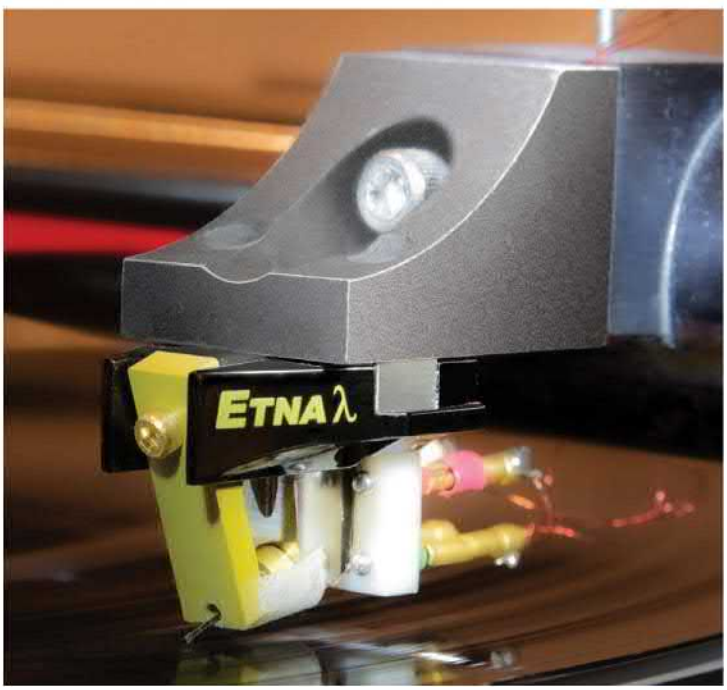
"The difference between the pre-Lambda and Lambda versions of the Etna is that they use different means to achieve cantilever preloading. The pre-Lambda Etna employed dampers that were tapered like a shallow wedge, whereas the Lambda version uses a system of flat dampers with a separate support structure we call the 'pillow.' The flat dampers ensure that the preloading of the cantilever angle is optimal and remains entirely in the vertical domain. This allows greater consistency in all aspects of performance. The revised design and new, specialized materials result in superior tracking and dynamics, as well as a lower noise floor for superior detail retrieval."

Now I don't know about you, but to me these sound like the tweakiest of tweaks. Flat dampers versus wedges? How much could *that* change the sound? Nonetheless, the results speak for themselves.

The second alteration in the Lambda Edition is easier to describe. Simply put, the new olive-colored front piece is now made from stronger, more rigid industrial polymers. Note that these changes were applied to what was already a highly advanced and unique cartridge design. To recap, all Etnas feature: a single-assembly stylus/cantilever mounted directly to a "nude" body to reduce resonances; an asymmetrical design that offsets the screw securing the front magnet carrier, so that it isn't in line with the cantilever mounting points; a solid-titanium core structure machined with non-parallel surfaces to inhibit internal reflections; a slightly undersized anodized duralumin outer body that locks over the core; a yokeless dual-magnet system; a diamond-coated boron rod cantilever and Lyra-designed variable-radius line-contact stylus; and X-shaped signal coils rather than the usual square-shaped coils.

As you can see, much more stayed the same—including the stylus, cantilever, coils, and overall structure—when Lyra created the Lambda Series. In that respect, Lyra was correct in not calling this the Etna II. However, from a sonic perspective, the latter would have been fully justified. The Etna Lambda isn't a cartridge that, upon first listening, elicits an "Ah, that sounds a little better here and there." Rather, your reaction is likely to be closer to mine: "Holy cow! This thing sounds fantastic!"

For any Etna owner (including owners of the SL, which is also now available in a Lambda Edition), the Lambda is an unquestionably worthwhile upgrade. Lyra will rebuild yours to the latest spec for $4495. For non-Etna owners shopping for a superlative cartridge in this price range, the improvement in the Lambda is even more reason to put the Etna at the top of your list. tas



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Jonathan Valin, The Absolute Sound. Golden Ear Awards 2022

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Kuzma Safir 9 Tonearm

Jewel

Michael Fremer

When your job is reviewing audio equipment and you're not also an electrical or mechanical engineer, you must often rely upon the expertise of others. That doesn't mean you should parrot what you're told or buy into everything tossed your way, especially by manufacturers or their publicists, but it does mean that often you are "flying blind," even when you try to corroborate information with other trusted sources. And sometimes even the most reliable outside expert can make a mistake.

For instance, my analog set-up guru, the late Wally Malewicz, who *was* a mechanical engineer and heavily invested in improving vinyl playback, once posited that "skating" was caused by a pivoted tonearm's angular offset, which is created either at the head shell of a straight-pipe arm or by an "S"-shaped arm tube. Groove friction produced by musical modulation and by the vinyl formulation itself produces a drag in line with the cantilever. Extend the line directly behind the cantilever and because of the offset angle, the drag does not intersect the pivot point. The frictional energy must go somewhere, so, Wally told me, it produces a force that pulls the arm towards the record center. (Hopefully, by now *everyone* knows skating does not result from centrifugal or centripetal force!)

Wally's explanation seemed plausible to me, especially since the offset angle on 12-inch arms is smaller, and longer arms produce less measured skating. Unfortunately, the offset angle is not what causes skating. If you're interested in learning why and what *does* cause skating, watch a series of six short videos produced by Wally's mentee, J.R. Boisclair, who was once Wally's assistant and now owns the company WAM Engineering LLC that among other things produces many of the tools I rely upon to set up tonearms and precisely install cartridges. (The first of the six short skating videos can be found on YouTube.) Otherwise, the late Mr. Malewicz's counsel was 100% accurate and correct, and I thank him for his expertise and friendship every time I set up a cartridge (which means I thank him a lot!).

What you'll see in the video is proof that the offset angle does not cause skating, but that "overhang" does. Both the angular offset and "overhang" (wherein the stylus extends beyond the pivot-to-spindle distance by a specified number of millimeters, so the arc traversed by the stylus also extends beyond the spindle) were devised at least one hundred years ago as ways to minimize LTE (lateral tracking error). If your arm can extend directly over your turntable's spindle, you'll see that the stylus literally "overhangs" the spindle. The arm's actual length (measured pivot to spindle) plus the "overhang" defines the arm's "effective length."

While audio journalist Percy Wilson is usually credited for the math, which was published in two Fall 1924 issues of *The Gramophone*, I recently came across an article claiming a very similar offset/overhang solution that was patented in 1908 in France by a Hungarian, Bela Harsanyi (tinyurl.com/3wbj3hs6), though apparently Wilson was unaware of it.

Meanwhile, there are misguided individuals producing arms with *no* offset angle and *no* anti-skating control, who believe no offset angle equals no skating, which is not true. However, no offset angle *does* mean increased LTE and greater distortion. Others produce arms with no offset angle and no overhang, thinking that solves the skating problem, but it doesn't! Instead, it produces a condition where the arm skates to the apex of the arc midway across the record and stops. Yes, at that one point there's no skating. Move the arm to the innermost groove area, and the arm skates *in the opposite direction* back to the apex. (You'll see this in one of the videos. For the purposes of the video demos, Mr. Boisclair uses grooveless records, but don't ever use one to set anti-skating!) Longer arms skate less because their geometry lessens the "overhang," not because of the decreased offset angle!

Has an arm manufacturer touted to you in person or in literature that his arm bearings use the highest quality ABEC 7 "Super Precision" ball-race bearings, followed by a spinning demonstration? I've seen that demo for years and was always impressed, until the obvious (so obvious that I missed it!) was pointed out to me by Acoustical Systems' Dieter Brakemeier, designer of the AXIOM tonearm: Bearings in tonearms *never spin*; instead, in the vertical direction at least, they move a *miniscule* fraction of a single rotation. Spinning demos are nothing but a flashy distraction. What's more important—critically important—is

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Absolute Analog Kuzma Safir 9 Tonearm

Specs & Pricing

Effective length: 229mm (9")
Mounting distance from spindle: 212mm
Offset angle: 23 degrees
Effective mass: 60 grams
Adjustments: VTA, azimuth, bias compensation
Internal wiring: Silver alloy
Overall mass (Weight): 1250 grams
Price: $22,000

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a bearing with low *starting* friction, so it responds immediately and precisely to vertical arm movements. Clearly, that's more important in a tonearm bearing than one that spins and spins. I missed that one for *decades*!

The "Technology" chapter of the sumptuously produced Kuzma brochure I picked up at the 2022 Munich High End show discusses in detail tonearm-bearing design. It references the importance of low starting friction and the relative inadequacies of ball bearings—even those that conform to ABEC standards—because they are open and attract dirt: in their grooves, on the balls, and in the oil. Instead, Kuzma and Brakemaier use a vacuum-packed, low-friction bearing type found in gyroscopes, each with an individual serial number, that's further tested for noise and lubrication.

A Restless, Creative Mind

Since 1983, the restless, creative mind of Slovenian mechanical engineer Franc Kuzma has produced a wide variety of tonearm and turntable designs. There are currently a dozen arms in the catalog. Kuzma got started when the LP was supposedly finished, obsoleted by the newly introduced CD. Kuzma's investment in "old tech" took a certain amount of "chutzpah" (Slovenian for "nerve"), though, like many others, he had faith in the superiority of analog sound, especially back then when it was *obvious* to all but the mathematically mesmerized. Clearly, his bet paid off.

Kuzma has designed and manufactured unipivot arms, gimbaled-bearing arms, true captured air-bearing arms (as opposed to free-floating "hovercrafts"), and of course his most original and I think his best design, the 4Point, which is available in 11" and 14" versions with pivot points offset by high-mass, "adjustable-on-the-fly" VTA towers, and in a 9" version, which, though it doesn't offer VTA "on-the-fly" adjustability, is, I think, the best sounding among them—or was until the introduction of the $22,500 Safir 9.

Like the conventional 9" 4Point, the Safir 9's effective length is 229mm, its P2S distance is 212mm, and its offset angle is 23 degrees. Unlike the other 4Points, the Safir 9's headshell is not removable, so swapping cartridges easily is out. No point in getting into the 9" vs 12" debate here, other than to say that each has advantages and disadvantages and that "off the record" (in order not to offend customers) many arm designers say they prefer the 9" arms.

The 4Point has been reviewed in these pages, but for those who tuned in late, the unique concept and execution bears repeating. Think of the Safir 9 and all 4Point arms as quad unipivots. Instead of a single hardened point sitting in a jeweled cup, there are four: two arrayed horizontally for vertical motion and another two arrayed vertically, in an enclosure around which they rotate, for horizontal movement. The hardened, super-sharp steel points sit in sapphire cups. Kuzma's Safir 9 literature claims, without explanation, that these are a "further improvement" over the ones found in the other 4Points.

The design results in very low friction, zero "play," and little or no (probably no) bearing "chatter" because of the high mass of the solid aluminum and brass block structure that supports both the arm tube and the four points. The mass will keep the point "glued" to the cup, though it will be able to "roll" as necessary within it. Unlike conventional unipivots, the 4Point delivers stability in all axes and free horizontal and vertical movement.

Though it lacks "on the fly" VTA/SRA adjustabil-

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ity, precisely setting VTA/SRA is easy, via a fine-thread screw within the arm base, accessible only when the arm is in its rest (similar to SME's system). I set VTA/SRA using a microscope at 93 degrees, which allows for a one-degree drop under dynamic conditions, and I'm done. If you obsess record by record, have at it, but count me out. I'm in it to play records, not play with turntables and adjust for every LP. Azimuth adjusts on the Safir 9 as on conventional 4Points with a smoothly operating worm gear that precisely rotates the arm tube, though here the system's even more elegantly realized. Anti-skating is via Kuzma's conventional weight/lever/monofilament system. The arm is wired with a straight run of silver-alloy wire sourced from Japan from cartridge clips to RCA (or XLR) plugs.

The large mass located above the pivot points produces an unusually high center of gravity—precisely the opposite of single-point unipivots, that, to ensure stability, usually hang the mass well below the pivot point. The 4Point's high center of gravity produces one behavioral oddity, which may at first disturb or even startle: If you lift the arm well up off the record surface, even with a cartridge installed, it will float up on its own and hang in the air, pulled *up* by the counterweight. The counterweight stub, placed well below the arm tube, enhances stability when the stylus is in the groove, but it contributes to this behavioral oddity if you lift the arm abnormally high. Even if raised slightly, you'll feel the arm wanting to float upward. The other 4Points exhibit the same behavior. The 11" and 14" versions include a vertical damping trough that I recommend using to minimize this issue, but in practical terms, unless you play a lot of warped records, it's not a problem. At record-level, the arm's behavior and tracking performance are exemplary.

The high center of gravity means that the higher up from the record surface you measure vertical tracking force, the *lower* will be the actual in-the-groove tracking force. The inverse is true of most arms with centers of gravity *below* the pivot point. Those arms, SATs for example, want to go *down*, not up. So the higher up from the record surface you measure VTF, the *lighter* will be the actual in-the-groove VTF. SAT gives owners a formula to calculate the correct setting based upon how high above the record surface your gauge measures tracking force. The discrepancies in both cases are not insignificant! For instance, to get the desired tracking force with the 9" SAT arm using a gauge that measures it 4mm above the record surface, you'll need to add 0.22 grams to what you measure. Most gimballed bearing arms have centers of gravity at the pivot (neutral balance), as do the Graham arms, even though they are modified unipivots, so tracking force values will remain the same however high above the record surface you measure.

The star of the Safir 9 show is, of course, the synthetic sapphire arm tube. Mass and stiffness determine how much an arm flexes and vibrates, while how well it's damped determines how long the vibration lasts. The Safir 9 tube is an extremely rigid and high-mass structure with an effective mass of 60 grams. The overall structural mass of the Safir 9 arm is 1250 grams, which makes it a *very* heavy arm, clearly not suited for spring-suspended turntables. I would think twice about putting the Safir 9 on a Linn Sondek or an Avid Acutus, for examples, but I've seen and more importantly *heard* one used successfully on a Döhmann Helix 2 turntable, which has an integral Minus-K platform suspension.

Kuzma claims the sapphire tube to be "resonant free up to 5kHz." I'll have to take him at his word about the tube itself, but as part of a tonearm *system* with bearing housing and other parts, all arms for which I've ever seen measurements have a low-frequency resonance in the 100Hz–130Hz region (arm measurements are of not just the tube but of the whole arm)—a resonance that you want to be at a low frequency and from there to fall off steeply and cleanly, usually followed by a second harmonic. Is the Safir 9 *completely* free of a low-frequency resonance? I haven't a means to measure. I can only go by what I hear. And of course, this resonance is not related to the arm/cartridge resonant frequency, which measured at the desirable 8–12Hz range with the low-compliance mc cartridges I used for the review.

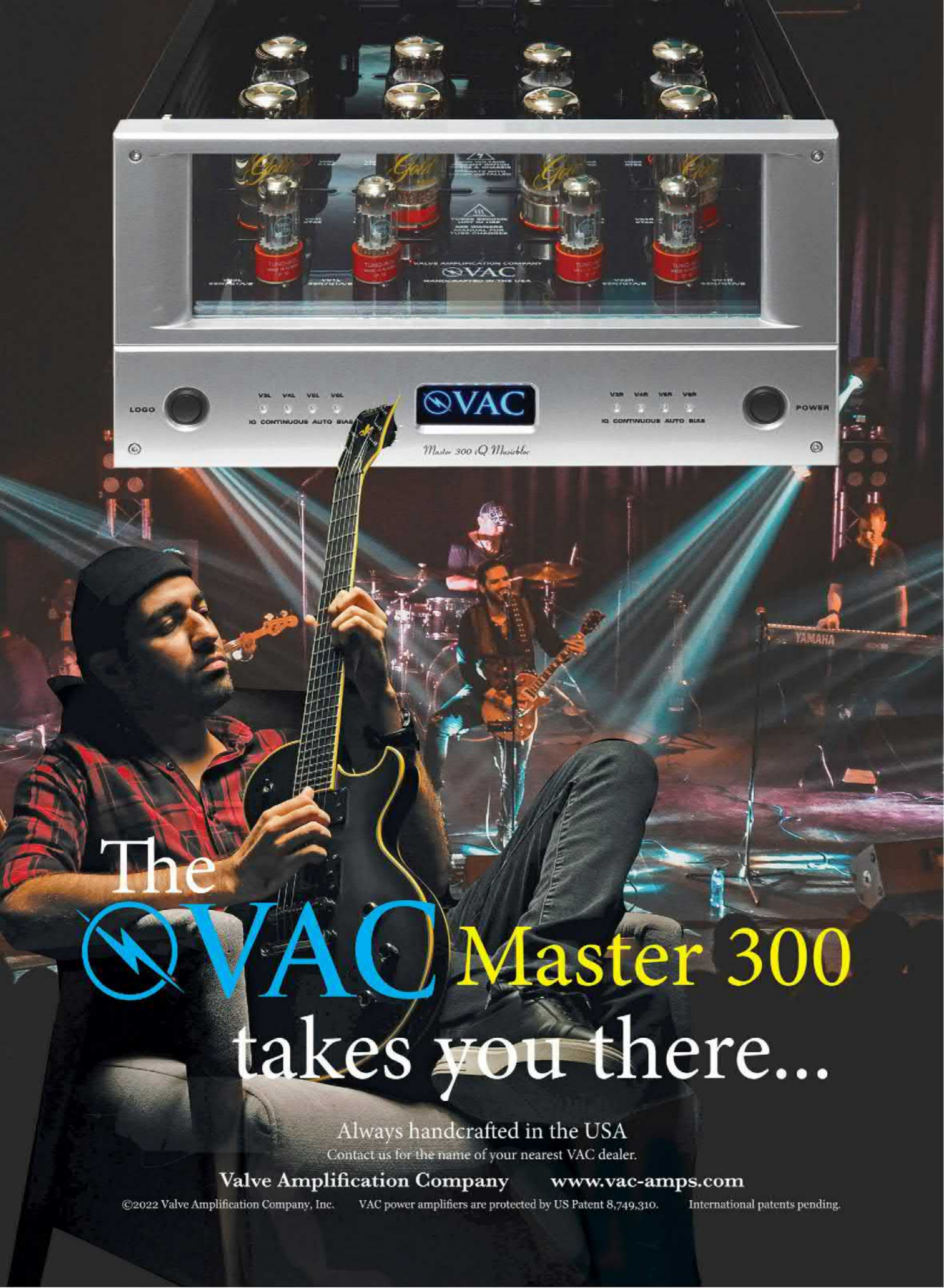
What sets the best arms apart from the lumpy and/or disorganized-sounding lesser ones are to a great degree how well they control these resonances and eliminate ones above. I didn't have to measure the SME VA arm used exclusively on the new Model 60 to know how well organized it was on the bottom, how deep and concentrated the bass was. Same with the SAT arms. It took only a few minutes back in 2015 to hear that the original SAT arm was the best I'd ever heard (though "best in the world" is not something I will *ever* write) and that the current SAT CF1-09 currently priced at around $50,000 is even better. Franc Kuzma's assault on "best" clocks in at less than half that steep price.

Safir 9 Setup, Use, and Sound

The Safir 9 is the easiest to set up 4Point thanks to a smartly redesigned pivot structure/arm tube block interface. Aligning the points in the cups of the previous 4Points has always been somewhat tricky. The new rectangular interface makes it easy, other than one cautionary tip for this and all 4Points: How you dress the wire loop exiting the arm block has a significant effect on the arm's free movement and especially affects setting anti-skating. If you have a WallySkater, set it up and "play" with the wire loop. You'll see how greatly its position can affect the applied anti-skating. The rest of the setup is straightforward "non-fiddly" Kuzma style, helped by an outstanding instruction manual, something Kuzma has steadily improved upon over the years.

I auditioned the Safir 9 on the Acoustic Signature Montana NEO and on the Esoteric Grandioso T1, which comes with an Ikeda arm. I couldn't use it on the OMA K3, which, because of its oversized platter accepts only 12" arms. Cartridges included the Audio Technica AT-MC2022 ($9000), the Ortofon MC Diamond ($9999), the Lyra Atlas Lambda SL ($12,995) and the Soundsmith Paua MkII ($3995).

There's no need to separate the review into how each cartridge fared on the Safir 9 because, while each produced the expected sonic differences, the results were the same. The Safir 9 made clear as only a few arms I've heard have, the difference between gen-



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uinely deep, tightly controlled bass engraved in the grooves of some records, and exaggerated, less than well-controlled "bass" created by lesser arms (and cartridges) that creates the "warmth" attributed to vinyl playback—especially in the mainstream press as it tries to explain the vinyl resurgence.

Experienced analog reviewers with whom I've spoken agree that the first impulse "pop" of the stylus hitting the record surface can predict with remarkable accuracy much of what you are going to hear when the music starts, but especially in the bottom octaves. A warm, "plummy," lingering "pop" or a hollow "drummy" signature signals warm colorations and lack of bottom end control, as well as resonances that will excite certain notes that can fool you into thinking there's deep bass in the grooves when there isn't.

What happens when a cartridge and/or arm, or the combination clears up and delivers the bottom octaves as well as the Safir 9 does? Both amazing and disappointing things. Few rock recordings have truly deep bass. Added colorations can add a pleasing warmth, but once you experience what an arm of this caliber can do for the truly great recordings in your collection, you'll have trouble going back. The title track on Davy Spillane's *Atlantic Bridge* (Tara 3019), featuring Bela Fleck, Albert Lee, and Jerry Douglas, plus Spillane's "Uilleann pipes" (yes, I'm recommending a bagpipe record), musically traces Irish migration to the birth of bluegrass and other music indigenous to the Appalachian Blue Ridge mountains.

It's a sonic spectacular with a very firm bass foundation that when exaggerated by arms that can't deal with the energy, adds some "shake the room" fun in the lower extremities, while also clouding up and obfuscating detail you don't miss until you hear it. When properly played back minus the resonant excitation, the entire sonic picture clarifies (especially in the lower midrange), the music's rhythmic thrust intensifies, and even higher frequency transients become noticeably cleaner and better resolved. The track "Atlantic Bridge" features Spillane on pipes and a low whistle, Albert Lee on electric guitar, Fleck on banjo, Christy Moore on bodhran (an Irish drum), plus percussion bass and drums. The Safir 9 reproduced with ease percussive details lesser arms hide within pleasingly warm and plump musical folds. You'd happily toss the warmth to get what the arm's lack of resonances reveal on this record and on all the familiar records played.

When records contain real low bass, the Safir 9 delivers it fully. When records don't contain deep low bass, the arm doesn't invent any. This also helps produce ultra-quiet, rumble-free backgrounds. I pulled out some "audiophile" classics I'd not played in years (or decades) to check out the arm's bottom end performance, including M&K RealTime's *The Power and the Glory* (RT-114) and the Telarc D2D classic Michael Murray playing *The Great Organ in the Methuen Memorial Music Hall* (Telarc 5035 DD-2). Anyone used to hearing "bass" on their Loving Spoonful albums and missing it through the Safir 9 (namely me), need only hear the 16Hz–20kHz+ recorded onto the Telarc and M&K records to know the arm is fully capable of delivering the deepest bass frequencies minus added resonant colorations.

The Safir 9 delivered with impressive, uncolored clarity, transparency, and spatial stability the Bruckner 7th Berlin Philharmonic direct-to-disc recording conducted by Bernard Haitink to which I was honored to contribute some annotation. The various cartridges—all low-coloration transducers—communicated through the Safir 9 their own pleasing differences, but what remained consistent was the arm's ability to deliver with unforced clarity the weight, textures, and rhythmic thrust of the double basses, violas, and cellos, while conveying without even a trace of hardness the sheen of the violins in what is a notably dry, unforgiving hall. Only my reference SAT arm at more than twice the price delivers the massed strings this way. As good as the standard 4Point is, and I've owned the 11" edition for well over a decade, it can't match the more costly Safir 9.

A revealing product like the Safir 9 almost forces you to retrieve and listen to long forgotten records. I found a 1978 Mark Levinson acoustic recordings *Eliot Fisk, Solo Guitar* (MLAR C 45 000 006). Fisk, who'd studied with Segovia among others, had just graduated Yale when he recorded this recital of his own Bach and Scarlatti transcriptions. The arm's resonance-free (or low-resonance) performance creates between the speakers a credible, stable, properly sized to be believable guitarist set in a subtle acoustic. The transient articulation is sensational.

Nirvana (Atlantic 90141-1) is a lesser-known Bill Evans Trio album recorded in 1961 and 1962 but not released until 1966, on which Herbie Mann accompanies the group. Recording began five months after the devasting Scott La Faro car crash and bassist Chuck Israels had just joined to form the "second trio." It's a mostly quiet, meditative set, including two Mann originals and Erik Satie's "Gymnopedie."

I fell in love with this quiet, soothing record while in college and made the stereo original one of my "go-to" late-night faves, despite the distorted piano sound. The mono 1984 reissue is better, with no piano distortion. Obviously, they ran a separate mono mic feed and tape recorder. The Safir 9 delivered this one with supple, extended, tactile bass, shimmering Paul Motian cymbal work, a rich-sounding, delicate piano that communicates well Evans' light touch and a subtle, lush side of the usually more animated Mann. The Safir 9 rendered this jazz delicacy as effectively as I've ever heard it.

Conclusion

Had I not spent the previous eight or so years owning and using as a reference the remarkable and costly SAT CF1-09, I'd declare the Kuzma Safir 9 the most accomplished and best-performing tonearm I've yet heard. I have no way to compare the two due to armboard logistics, but I can write with complete confidence that at less than half the price of the SAT the Safir 9 offers more than credible competition, though it might fall slightly short on bass "wallop" (the genuine, not resonance-produced kind). It shares with the SAT an elegant design simplicity, ease of setup and use, build-quality, and of course an ability to sort out, organize, and present with relaxed, confident authority whatever the cartridge pulls from the record grooves. tas

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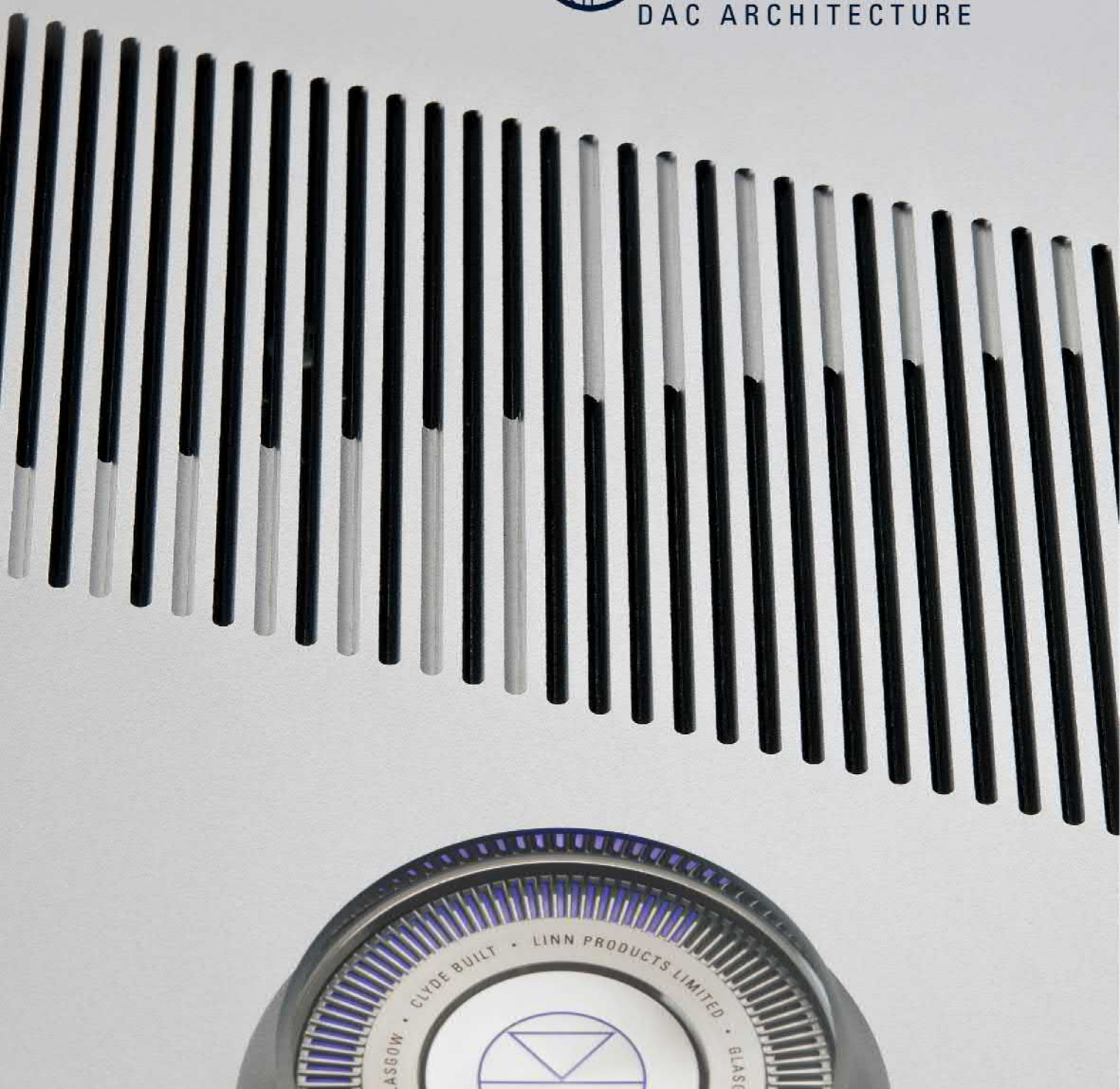

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Cambridge Audio Evo 150 Streaming Integrated Amplifier

One-Box Wonder

Muse Kastanovich

For a couple years now, my primary streaming device has been a product from Cambridge Audio. I'm familiar with the brand and its sound, and I was excited for the chance to review its newest everything-integrated, the Evo 150 ($3249). Opening the box, I was surprised by its size, but more so by its features—how did Cambridge Audio manage to jam every possible function inside? So often, the hi-fi world feels obsessed with *inconvenience*, and the mere whiff of ease-of-use can turn a hardened, world-weary audiophile against a product before she has a chance to give it a listen. Convenience is for the consumer audio masses—not for the lofty elites tinkering away with their custom tube amps, while getting high on the smell of melted solder. Too many people (companies/reviewers) value size, weight, heat, and fussiness over simplicity. But I'm here to say: That's wrong. Convenience is good. Convenience is the future. Long live convenience.

Enter the Evo 150. At a first glance of that back panel, nobody would accuse the Evo of being *simple*, though I think that's missing the forest for the trees, but I'll get there. First, the customary description: The $3249 Evo 150 is an all-in-one integrated amplifier that packs just about every feature imaginable into its little frame. It outputs 150Wpc from its Hypex NCore Class D amplification output stage, which means it has plenty of power and runs cool and efficiently. I happen to be a fan of cool and efficient, in contrast to the big honking amps that double as hot plates. The Evo 150 has a ton of input options, including a phonostage (mm only), RCA, balanced XLR, optical, coaxial, USB (mass storage), USB audio, and HDMI ARC for TV control. For streaming, there's AirPlay 2, Chromecast, Spotify Connect, Tidal, Qobuz—plus it's Roon Ready and has full MQA decoding. Step back and think about this for a second: That's practically every single input imaginable, plus every major streaming service. I love that they include Chromecast—how many other streamers use Chromecast? Not many! Other outputs include a headphone jack, preamp out, subwoofer out, Bluetooth, and speakers. It's got Wi-Fi an Ethernet port, USB mass storage, and USB audio and is compatible with a bunch of audio formats (ALAC, WAV, FLAC, among others), and there's a very nice ESS Sabre ES9018K2M DAC in there, too.

I talk a lot about box design in my reviews, and it's strange I haven't mentioned design yet, as it's a prominent feature of the Evo. The overall shape is rectangular, with a big dial on the right formed of an inner silver ring and an outer black circle. The bulk of the face is taken up by an LCD screen that looks very nice and includes hardware buttons for different functions. And finally, the side panels are removable and swappable between two different styles—one is a modern, sleek, black wavy pattern, and the other is a nice faux-wood grain. I kept the black panels on because that's what it came with, but I did find the process of swapping them out pretty simple. Overall, it's a nice-looking machine, and I like that Cambridge Audio went to the extra effort to add a bit of aesthetic flexibility. If you've got

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Specs & Pricing

Type: Integrated amplifier with integral streaming
Power output: 150Wpc into 8 ohms
Amplification: Class-D Hypex Ncore
DAC: ESS Sabre ES9018K2M
Frequency response: 20Hz–20kHz ±3dB
Analog inputs: 1x RCA, 1x balanced XLR, 1x moving-magnet phono
Digital inputs: 2x TosLink optical, 1x SPDIF coaxial, 1x TV ARC USB, Bluetooth, USB mass storage, USB audio
Streaming: Bluetooth, AirPlay2, Chromecast, Internet Radio, Spotify Connect, Tidal, MQA, Qobuz, Roon Ready
Outputs: Speakers A+B, 3.5mm headphone, preamp output, subwoofer output, Bluetooth 4.2 A2DP/AVRCP supporting up to aptX HD
Dimensions 12.5" x 3.5" x 13.8"
Weight: 11.7 lbs.
Price: $3249

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a vintage wood-vibe going, this *über*-modern streamer will still fit in and won't mess up your décor.

Are you tired of me listing specs? I'm tired of listing specs, but I did that for a reason. The Evo is called an all-in-one because that's what it is. Yes, the back is somewhat cramped, jam-packed with connections and such, and yes, there's a bit of a learning curve in terms of functionality. But once you get past the initial setup, it's like the Evo disappears. I've had it in my listening room as my primary system, and I can promise that I've thought about it maybe a dozen times at most—and only when paying attention during listening sessions. During my normal life, the Evo has melded into the fabric of my office.

Setup was simple, but it did involve the StreamMagic app, mostly just to get the Evo connected to my Wi-Fi and updated. Streaming controls and settings are easily available in the app, which is nice, but I didn't find they were necessary, though the Evo does include tone controls if you're into that sort of thing, and it was the best option for streaming from my NAS outside of the Roon interface. That said, I didn't find myself ever *needing* the app past the initial couple hours and NAS access, and unless the app appeals to you personally, I suspect most people won't need it either. But I have to admit, for an app built by a primarily hardware company, it's not bad. Once the Evo was on my network and humming along, remaining setup was extremely simple: Plug it in, hook up the speakers, connect my turntable to the mm phonostage, and I was listening in minutes. The Evo is customizable and flexible, with a myriad of inputs and options and settings, so if you want to fiddle, you can definitely fiddle. You just don't *need* to, which is the beauty of an all-in-one like the Evo. It just works.

First thing I tested was the phonostage. It's moving-magnet only, so I swapped out my typical Zu Audio DL-103 for a nice, inexpensive Grado Blue. I'm a big fan of the Grado sound and think the company's lower-cost cartridges are some of the best of the entry-level choices. I put on the recent Blue Note reissue of Geri Allen's *Twenty One*, a trio record featuring Geri Allen on piano, Ron Carter on bass, and Tony Williams on drums. It's one hell of a lineup and a fantastic set. Through the Evo I found Allen's piano shimmered with nice clarity, and the top end had decent shine. But there was some softness, particularly in the bass, and the kick drum had a bit of mush—something that would recur later when I swapped cartridges. Still, despite the softness, I found the Evo's phonostage on the neutral-to-warm side with a touch of slow, gentle fuzz down low, sparkle up top, and a really lovely midrange clarity Not a bad sound, at all—in fact, it worked pretty well with the Grado—but it did surprise me a bit, considering the Evo's sound profile otherwise. Most telling, I spent a lot of time with the Evo, and at no point during my testing and reviewing did I ever really want to swap it out for my usual system, including this phonostage—which is probably the Evo's weakest feature. That's not to say the phonostage is bad, but that the Evo's real strengths lie elsewhere.

But if you're a hardcore vinyl geek and you're not sure if the Evo is right for you, there's good news: The AUX inputs were perfect for hooking up my separate phonostage. That was my next test, and the Evo impressed right away. The low-end softness was tempered by my system's usual sound turned up to max. I found the Evo's general signature was generally crisp and clean and neutral in most applications, almost surprisingly so. Bass drums had punch, guitars had weight, mids were crunchy and sharp. Listening to that same Geri Allen album revealed some lovely details, like Tony Williams' brush work, for example. The Evo resolved the subtle details with a refined palette. There is a very minor problem, though. The Evo includes only a single RCA input. That means if you're using a separate phonostage, there won't be a free unbalanced slot. Still, there are like a million other inputs, so it shouldn't be much of a problem, though it is worth keeping in mind when building your system.

Next up, I dove into streaming. And let me say that the word "streaming" feels inadequate here. The Evo can parse, pull, decode, and play just about any file type or service available. It'd be overwhelming if the Evo weren't so simple and intuitive. The StreamMagic app can play just about whatever you throw at it, but the Evo also shows up in the Tidal, Spotify, Amazon Music, etc. apps natively—and it does MQA, if that's your thing. Roon compatibility was a nice feature and for the most part, I used it as a Roon endpoint. But initially, I accessed my NAS server via the StreamMagic app and played a 48Hz/24-bit FLAC file of Miyasaka+5's album

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Animals Garden. The Evo reproduced the title track with gorgeous aplomb. The soundstage was wide and deep, with the drums set off in the back and kicking hard as the tune progressed and the bass walking along in a solid, steady rhythm. The lows had heft and space, but they didn't overwhelm the vaguely percussive and sharp piano playing. Even when the horns screamed, the individual instruments were still clearly defined and in their own spots, which I felt was a hallmark of the Evo's expansive neutrality.

I moved on to Kate Bush's album *The Dreaming*, in particular the song "Suspended in Gaffa," and switched over to Roon and MQA. The drums were punchy and well-defined if sporadic, with the pulsing bass line holding the threads of the song together. It's a gossamer and drifting sound, and Bush's voice was sharp and tight, even in the sections where she's whispering. The range of her voice is always a pleasure and a surprise, from loud, borderline-shrill, high-pitched moments to quiet gentleness. Her range is fantastic, and the Evo did justice to the myriad Bush voices that flit through this album, providing the right amount of subtlety in the soft sections and ramping up the drive when the bass and guitar kicked in and really began to churn. In particular, the song "Leave It Open" finishes with banging drums, and they sounded both heavy and present.

Purchasing good power cords at this price point should not be considered optional.

From here, I jumped around. I listened to "Ants Invasion" by Adam and the Ants and found the driving backbeat engaging, the guitars sharp and big, the soundstage surprisingly wide and deep, and the rhythm engaging. Then I leapt over to "It Was a Pleasure" by Echo and the Bunnymen and caught myself nodding along and forgetting about this review for a few minutes. Streaming can have this frenetic quality if you follow the algorithms and let the platform dictate where you're going—the spiral paths of recommendation machines can either be a pleasure in the form of new discovery or a nightmare in the form of scattershot noise, with nothing to connect it all, aside from a vague robot-generated sense of similarity. But whether streaming is *good* or *bad* (it's neither/both), the Evo sounded great no matter what I threw at it. I could pick out subtle differences between versions when paying close attention, but mostly I wanted to keep the music rolling.

There's a cliched idea in the hi-fi world that one product can't do everything well. To get supreme quality, we need multiple shiny boxes with snake-nests of cables dangling between them. I'll admit, I'm a many-boxes fan. But the Evo 150 has certainly changed my mind, and I'd argue that it proves progress is happening (and progress is good) and that one device is easily capable of handling multiple tasks, from analog to digital. Its Class D amplifier doesn't sound like ye-olde-Class-D, and its versatility isn't a hindrance but a boon to any decently connected music lover. It has a great DAC, a myriad of inputs, plenty of streaming options, and on final listening, it sounds great. It's the sort of box that could anchor a new system or replace an aging one. And frankly, in all the time I used the Evo as my primary driver, I never felt the need to swap it out. That says a lot. If you're in the market for an all-in-one streaming integrated, the Evo 150 is the place to start. tas

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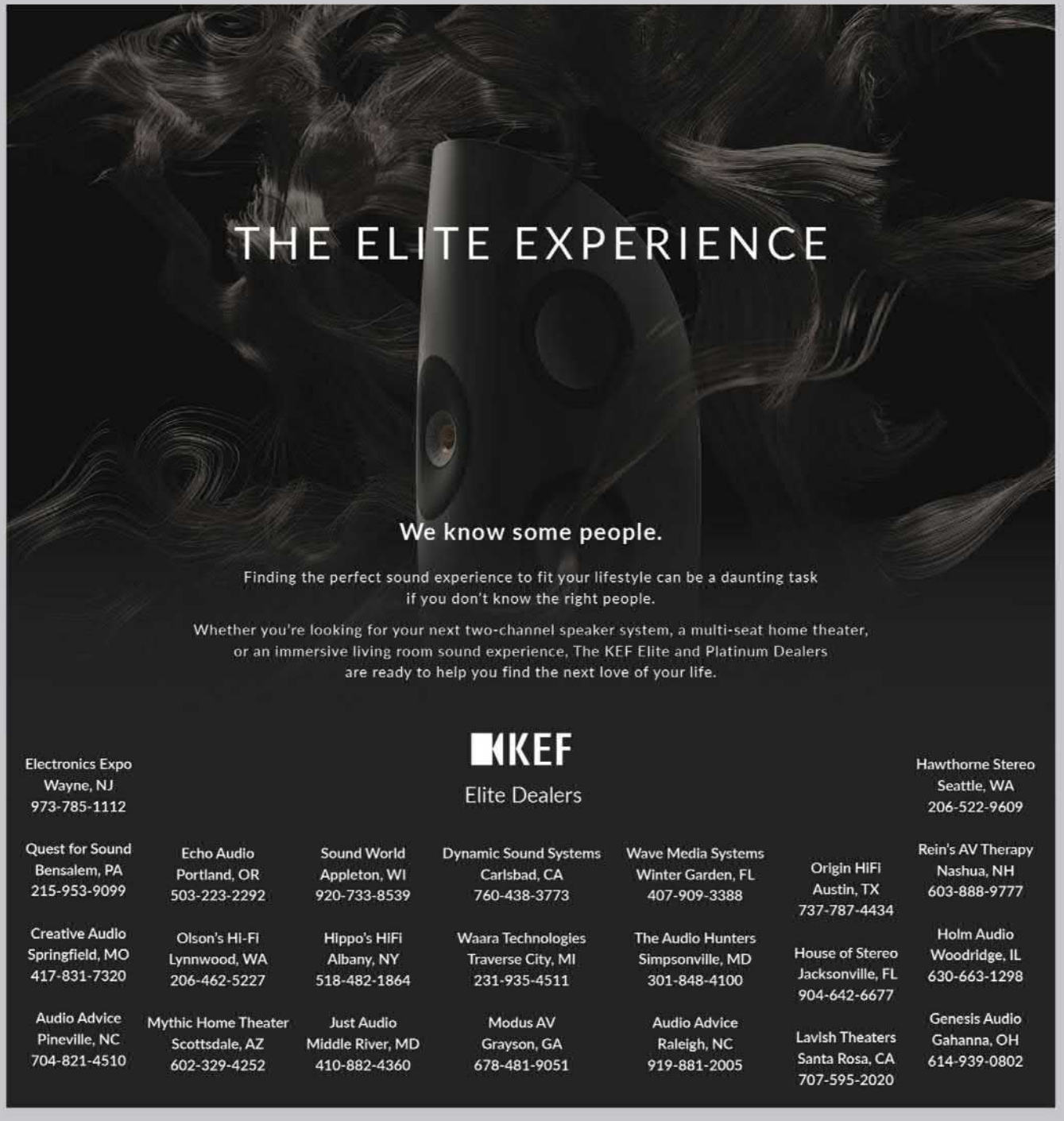

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Amped America AMP2400 Power Amplifier

Class D-Lightful

Steven Stone

Over the years in my capacity as a reviewer I've had my wits addled by a bewildering variety of manufacturers' names and product designations. Some were morbidly amusing, such as Your Final System, while others merely inscrutable, like SMSL. I'll admit to some minor mental warpage, because when confronted by the manufacturer Amped America, my first thought was, "Do they sell protein supplements?" But no, Amped America makes audio electronics in the United States using its own proprietary designs. That's why they have come to my attention and, henceforth, yours, as well.

Currently Amped America has three products in its roster, a preamplifier, the AAP-1, and two stereo power amplifiers, one with 200 watts and the other with 400 watts per channel. The AMP2400, which is its 400Wpc Class D basic stereo power amplifier was sent to me for review. With that kind of horsepower, I should have been able to propel the drivers in my high-sensitivity, single-driver monitors out of their box and across the room if I wasn't careful. I will try to restrain myself as we look and listen to the AMP2400 power amplifier.

Tech Tour

Unlike many Class D power amplifiers that use a Texas Instruments, Hypex, or ICE power module, the AMP2400 uses a Pascal ProXS2 amplifier module. When I enquired as to why Boris Meltsner, Amped America's principal designer, chose the Pascal module, he wrote, "I first met the principal Pascal engineer in 2017 at CEDIA. After I tried ICE power and the Hypex modules, I then tried the Pascal and loved it, so that was the module I used for the AMP 2400."

The AMP 2400 produces 29dB of gain, which is slightly more gain than the standard 26dB. And while this is a powerful amplifier, it only draws 3W at idle, so you can leave it on 24/7 and feel no pangs of guilt for profligate energy usage. The AMP 2400 also employs what Amped America calls AUSP (Audiophile Ultra Sonic Performers), which is a combination of reducing any stray magnetic fields inside of the unit and designing the PCB board for lowest noise. And the amp definitely generates extremely low amounts of noise. It is so quiet that with most loudspeakers whose sensitivity is below 100dB you will hear no sound or sign that the amplifier is on from loudspeakers at idle.

Audiophiles tend to think about Class D amplifiers as "that new amplifier technology," when in fact it was first devised in 1958, which predates the first big wave of consumer solid-state audio gear. Given the length of time the technology has been in existence, it is no wonder that the quality and performance of Class D amplifiers has improved over the years. With top-tech firms including Texas Instruments, Applied Analog Devices, B&O, Hypex, Eigentakt, Pascal, and others all competing against each other and working to improve their own Class D amplifier modules, it shouldn't be surprising that Class D has progressed to the point where these designs can deliver a level of performance that used to be beyond their reach.

The Amped America A2400 amplifier ranks as unique for several reasons. The A2400 circuit topology is a combination of Old School Class A linear design and Class D. The input module is Class A, while the Pascal module is Class D. This topology is combined with Amped America Audiophile Ultra Sonic Performance (AUSP™) and a fully protected high-efficiency power supply with Auto Selectable Mains (HEPS™), which results in the A2400's more than respectable specifications. TheA2400's S/N figure was obtained through careful design of input PCB, resistor choices, and, of course, the Pascal module.

Most power amplifiers priced under $5000 come in the equivalent of a plain brown wrapper—a rectangular black or silver metal project box. The A2400 uses a better scheme. Its chassis is made of six separate CNC-machined aluminum sections designed to allow for maximum ther-

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Specs & Pricing

Type: Class D, Pascal module
Output power: 400Wpc/8 ohms; 800Wpc/4 ohms
Inputs: Single-ended RCA or balanced XLR
Input impedance: Balanced 100k ohm, unbalanced RCA 50k ohm
Dimensions: 19" x 3.4" x 12.25"
Weight: 17 lbs.
Price: $5000

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mal flow. The A2400 also employs a high-quality, low-noise fan to permit air flow in a way that solid heatsinks simply can't. During the review period, I never heard the fan operating. I suspect that unless you mate the A2400 with an inefficient loudspeaker in a large room and aim for 95dB-and-above dynamic peak levels you may never activate the cooling fan.

Ergonomics and Setup

Up until fairly recently, if you had a loudspeaker that required more than 300 watts from your power amplifier, that amplifier was going to be physically large and heavy, whether it was solid-state or tube. The AMP2400 weighs 17 pounds; yet it can deliver 800 watts into four ohms. That's an amplifier that even I can carry around easily.

Setup was simple and straightforward. I connected the AMP2400 via its balanced XLR inputs using Wireworld Eclipse 7 interconnect. Since the AMP2400's gain was slightly higher than that of my reference Pass 150.8, I raised the input levels of my pair of JL Audio f112 subwoofers to compensate for the difference. The AMP2400 has a power switch on the back, as well as an on/off button on the front that turns from red to blue when the amplifier is in operational mode. The blue light is bright enough to be seen but dim enough so that even underneath a projection screen it is not objectionably bright.

Due to its low draw of only three watts in standby mode, I left the AMP2400 on 24/7. During the review I tried several different power cords, including a WireWorld Status 7 recommended by Boris at Amped America. I compared it to an RSX Benchmark ER-20 power cable and heard no differences I could attribute to the power cables.

Sound

What should an amplifier sound like? Many years ago, J. Gordon Holt asked the question, "How can a single-ended tube amplifier and a balanced solid-state amplifier both be optimal power amplifiers?" The simple answer is, "They can't." The more nuanced answer (which J. Gordon Holt surmised) was that in a particular system, one or the other can be optimal, depending on the sonic character of the rest of the system. Also, different amplifiers and amplifier technologies handle different types of loudspeakers and their impedance characteristics with varying levels of compatibility. Depending on someone's taste, the other components in his system, and his room's acoustic properties, he could have a strong preference for one style of amplifier technology over the others in that particular installation.

The AMP2400 delivered superb dynamic contrast and image specificity coupled with exemplary low-level detail.

The AMP2400 is in the straight-wire-with-gain camp. Mated with the Spatial Audio X-2 loudspeakers and tethered via Audience Au24 SX cable, the AMP2400 delivered superb dynamic contrast and image specificity coupled with exemplary low-level detail. By itself (not in an A/B comparison), the AMP2400 sounds like no amplifier at all. I never got the feeling it was doing anything additive or subtractive, harmonically or dynamically. In my system the AMP2400 seemed to be doing nothing except amplifying the signal that was fed to it.

My sonic descriptions and notes from listening to the AMP2400 are far more about the music being played than the AMP2400's intrinsic character. Poor recordings did not sound magnificent through the AMP2400, but they were always listenable. Even some rude punk stuff such as The Stranglers' *Black and White* album's "Nice and Sleazy" was tolerable, although it was still noticeably edgy.

Currently, I don't have access to any especially hard-to-drive loudspeakers. I will readily admit I'm not a big fan of low-efficiency, complicated-impedance-load loudspeakers, although I have in the past owned Apogee Scintillas. So, it should be no surprise that the AMP2400 had no issues driving everything I had on hand. And even with the most efficient loudspeakers I've got, the Omega prototype single-driver monitors, the AMP2400 was silent, with no hiss or hum even when my ears were nearly touching the drivers. This characteristic of extremely low noise vastly expands the kinds of loudspeakers it can mated with. If you have sensitive, high-efficiency speakers and are looking for an alternative to big, hot, expensive-to-own-and-run Class A amplifiers, the AMP2400 could be a worthy alternative.

Competition

Currently I have three very different "reference" power amplifiers in rotation. There's the Topping LA90, LSA Warp One, and Pass Labs 150.8. They're all fine amplifiers, but they do not sound exactly the same on the Spatial X-2, loudspeakers or the ATC SCM7III, Omega Prototypes or the Audience 1+1 loudspeakers.

The Pass Labs 150.8 and 150.3 before it have been my longtime reference power amplifiers. I was surprised to hear that the AMP2400 had a similar harmonic balance,

as I had expected the Pass to be a bit more euphonic and perhaps harmonically complex, but that was not the case. The primary difference I could discern between the two power amplifiers was that the AMP2400 did a slightly better job of decoding spatial subtleties. On my own live recording of Daniel Danielpour's *A Woman's Life* performed by the Boulder Philharmonic, the ASMP2400 placed performers and instruments in more precise locations compared to the 150.8. Both power amplifiers did a superb job on Angela Brown's mezzo vocals, never wavering from mellifluous even during her crescendos.

Obviously a 400-watt amplifier is going to have quite a bit more power capability than a 40-watt amplifier, but the Topping LA90 and the Amped America AMP2400 shared many sonic characteristics. Harmonically, I heard the same level of complexity from both amplifiers. Some spatial and dynamic differences were discernable, however. The AMP2400 handled Angela Brown's crescendos with more control and delineated the three-dimensional space with a bit more precision.

Harmonically, the Warp One was extremely similar to the AMP2400.

Replacing the AMP2400 with the LSA Warp One amplifier proved to be the most ear-opening comparison for me. I was surprised to find the Warp One produced an even more precise lateral image than the AMP2400 on my live recording of the Mr. Sun band made at the Salina Schoolhouse. While laterally more precise, the Warp One did have a bit less depth and three dimensionality than the AMP2400. Harmonically, the Warp One was extremely similar to the AMP2400.

Summary

Circling back to the name game that began this review, it's unfortunate that Class D amps were christened with the "Class D" moniker. After all, anyone with only a passing understanding of amplifier classes might wrongly assume that Class A is always better than Class D, otherwise why would it be considered Class A? You and I understand that it is a classification based on the amount of energy that is lost as heat, not an indication of sonic quality. But it's hard to liberate audiophile consciousness from the idea that Class A is better than Class D.

For those audiophiles who have freed their minds from the antiquated idea that Class D amps are inferior to Class A or AB, the Amped America AMP2400 offers an excellent alternative to the traditional high-power amplifier designs that have predominated for many years. If you require a powerful, efficient, and ridiculously neutral power amplifier, the AMP2400 can deliver the goods. tas

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Schiit Audio Loki Max Equalizer

Taking Control

Robert E. Greene

If the Loki Mini+, which I reviewed in February 2002, is an introduction to broadband EQ on the cheap (but good), the Loki Max is a head-on assault on the best possible analog EQ of the broadband type. It is, in a sense, a contemporary reply to the famous Cello Audio Palette EQ device introduced in the early 1990s.

It is less massive and less expensive than the Palette, but it has similar sonic goals and similar aims of uncompromised quality—aims which are accomplished superbly well. Purists may find this hard to accept, but Schiit has come up with an EQ device that is transparent down to the level of the cable connections involved. Anything one inserts in a signal path will do something, but the Loki Max is amazingly close to doing nothing at all except what it is supposed to do, altering frequency response and, as a minimum-phase device, altering phase response correspondingly. It is a remarkable component, indeed, worthy of a place in the most exotic systems there are—and a useful place it will be, too.

I was talking about the Loki Mini+ in my review almost in a spirit of fun. It was and is so inexpensive that one did not have to worry about exactly how good it is, although, in point of fact, it is very good. But the Loki Max aims higher, at the target of essentially ideal transparency, and to my mind hits that target. It is not inexpensive by Schiit standards, but by prevailing high-end standards it is in the moderately priced class, and yet it is worthy of a place in any system. And for reasons clearly explained by Mark Levinson of Cello at the time of the Cello Palette, it is something everyone who is serious about getting the most out of recordings really ought to have.

Levinson's logic went like this: The balance of a recording is chosen by listening to that recording on the monitor system in use at the time it was made. But this monitoring was inevitably different from the system you are using for playback. Even if both are "neutral" in general terms, it is unlikely to the point of never happening that they will match exactly. So, one is always in the position that getting exactly what was intended will involve some adjustment at the playback end. Alan Taffel discussed this in detail in his Legacy article on the Palette four years ago (theabsolutesound.com/articles/tas-legacy-cello-palette-equalizer-preamplifier); you should have a look. I would like to explore this point a little further and some fundamental truths about sound reproduction.

Frequency Response in General

It has been understood for a long time—in effect, forever—that the nature of a heard sound has got something to do with its spectral content. A common language was developed from the beginning, long before reproduced sound existed—words that described frequency content, such as muffled, piercing, brilliant, hissing, boomy. The list goes on and on of aspects of sound that are essentially just descriptions of the relative prominence of various parts of the spectrum of the sound.

Eventually, people began to analyze sound in terms of spectral content more explicitly. And rather surprisingly, a mathematical theory, Fourier analysis, was developed that actually analyzed every signal from this viewpoint, whether the signal had anything to do with sound or not.

Meanwhile, back in the more recent and practical world of audio, people observed that the only hope of getting anything like an accurate reproduction of a sound involved getting the spectral content correct. Flat frequen-

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Price: $1499

Manufacturer Information
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cy response became a standard criterion for audio accuracy. Other things were involved, too. But if you did not get the spectral content right, the sound reproduced would not be the same in listening terms as the original.

This has, of course, been a standard part of our understanding of sound for a very long time. But the more that better thinkers got at making small alterations in frequency response and also in making exact determinations of the alterations that were not purposefully occurring, the more they realized how sensitive in listening terms we are to such alterations. The current accepted threshold is that broadband alterations of response by ±0.1dB are likely to be audible. (Some people claim even ±0.05dB can make an audible change in the more sensitive parts of the frequency range.)

At the same time, a speaker that is flat within ±1dB, ten times the threshold, is regarded as very flat, indeed. And this is true even of "monitor" speakers for professional use. (This doesn't even consider that the perceived response depends not only on direct arrival sound but also on off-axis behavior in a non-anechoic environment.)

What this means in practice is that even if all you want is to hear what the people who made the recording heard, you really have no way to be sure that is going to happen, no matter how accurate your own speakers are. There is also the fact that the people who made the recording had no way to know exactly what it really sounded like, either.

This sounds like an occasion for despair. But it really is not so bad. Because frequency response is adjustable on the fly, you do not have to live with whatever balance your speakers have by nature and in your setup.

Naturally, professional audio people caught onto this quite early. Way back in the 1950s, when RCA was making their almost legendary Shaded Dog stereo records, they were altering frequency response electronically to please themselves and/or to make the sound more like the real sound—or at least to make it so on the speakers they were using for monitoring. Ironically, when the high end showed up with its disavowal of altering response by "equalization" (as electronic alteration was called and still is), one of the recording series they adopted as a beau ideal were precisely those RCAs—which were considerably EQ'd. "Pay no attention to the man behind the curtain" from the *Wizard of Oz* comes to mind.

Over the years, monitor speakers and home speakers have in a limited way converged on a common standard of frequency response. But limited is what it is. So, even for contemporary records, one still has a very good reason to want to be able to adjust to make particular recordings sound "good" in whatever sense one interprets that word.

And it is important to understand just how limited the convergence has been. All you have to do is carry the same recording around to different rooms at an audio show. You may like what you hear in various places. But it will be a surprise if any two rooms make it sound even approximately the same way! Standardization is far from complete. Perhaps this keeps audio life interesting, but it surely makes it evident that being able to adjust is a very desirable thing.

The Loki Max in Operation

The Loki Max equalizer is a line-level device. Once you have installed it in a suitable spot in the audio chain, either between sources and preamp or between preamp and amplifier, you can immediately begin experimenting with the sonic changes its adjustments induce. (Between source and preamp is preferable for noise minimization in my experience, unless you need more than two sources switchable—the Loki Max has two inputs only.) There are six bands, which range ±12dB at 20Hz and 16kHz, ±9 dB at 120Hz and 6kHz, ±6 dB at 400Hz and 2kHz. Each band admits 31 levels, 15 steps up from the zero, a no-change setting, and 15 steps down. The Loki Max uses relay level controls, with discrete steps, avoiding the possible noise problems of continuously variable potentiometers. Response control is by pure LC (inductors and capacitors) circuitry. (You can find further details here: schiit.com/products/loki-max.)

The step size is smaller when close to the 0 level, and larger at extreme positions, making fine adjustments from the zero neutral level possible. One could say low bass, middle bass, lower midrange, presence range/upper midrange, middle treble, upper treble are the bands. You can find the exact nature of what happens shown graphically here: schiit.com/public/upload/ PDF/Loki%20Max%20APx555%20Report.pdf.

Setting any of the controls in extreme positions will make large sonic changes. But you might want to start with fairly large changes just to get the idea of the type of effects that can be induced. Once you have the general idea, you should put everything back to flat. Note first that with all controls set flat, literal bypass

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(which can be done remotely as you listen) sounds the same as with the circuit in but set to flat. The Loki Max has very low noise and very low distortion and does effectively nothing when it is not asked to make frequency-response changes. Then, with the device in the circuit (bypass off), you can start serious investigation.

The first question to look into is whether you can make your speaker/room combination more nearly neutral, as you perceive neutrality. As always, one can also carry out investigations using measurements. Presumably, you have speakers and placement of them and room arrangements in general that strike you as satisfactorily neutral already, or you may have DSP room correction in place or some other kind of fixed EQ. It is, in fact, a good idea to have some sort of fixed EQ to make your room/speaker combination as close to neutral (as you perceive neutral) as you can manage, so there is a baseline to start EQ'ing recordings from.

Now, note in this connection that the Loki Max is not primarily intended as a speaker or room/speaker correction-device. That is not its intended purpose, and the changes it makes are too broadband to address all the issues that arise in room and speaker correction. What the Loki Max is really aimed at is fixing up recordings! Even so, it is quite often true that in a room/speaker combination that does not use DSP room correction small broadband adjustments can make for improved sound. You may find that a little tweaking with the Loki Max improves the sound in the basic system. Once you have focused on what the Loki Max can do for the overall sound, you can and should save the settings in one of the three available presets and use that preset as the baseline for correction to improve recordings.

There is an important point here: Just because you are used to your system and accept it as it is, it does not follow that you really think it is absolutely ideal in balance. When the chance is offered to change the balance, you may find that relatively small changes may make it better to your ears. (As noted, the step size on the controls in dB terms is smaller when you are near the flat position, so fine tweaking around the 0dB positions is possible.)

You have to give yourself some time here. There is strong evidence to suggest that people adjust over time to their system's frequency balance and accept that as correct, even if it is subtly wrong or at least subtly not as satisfying as it might be. So, you have to give yourself a chance to adjust to a slightly different situation to find out whether you like it better or not. This whole process can take some time if you want to get it absolutely optimal. Note that at the level of micro-adjustment, we are not speaking here of definite ideas of right and wrong. While a speaker or speaker/room combination can be wrong enough to be demonstrably wrong down at the level of discriminations, of JNDs (just noticeable differences), what is really "right" becomes ambiguous, especially since the room contribution—the reflections and overall room response—play a role. Standards tend to involve elements of arbitrariness at the level of ultimate refinement. No wonder no two audio-show exhibits ever sound exactly the same!

In this preliminary stage of finding the maximally neutral base line (which will be presumably close to the flat or "0" setting but not absolutely "0," perhaps), and also in learning what the controls do, listening to pink noise may be a useful supplement to listening to recordings that you have some reason to believe are reasonably faithful to actual acoustic sources. One can learn a lot here about thresholds and getting the tonal balance right and about how much difference small changes in response can make in musical terms, as well as in terms of pure audibility in the sense of hearing differences.

Using the Loki Max for Music

Once you have your baseline neutral preset in place, you are ready to start using the Loki Max as it was intended to be used. But unless you are experienced with EQ already, this may be something of a learning experience. The results will be well worth the effort, however. I would suggest starting with an orchestral recording that you have reason to believe ought to sound "good"—in the sense of sounding like an actual orchestra in concert. Try moving the controls up and down by small amounts in "real time," as the music is playing. The remote control makes this easy—you can make changes without leaving the listening position. The bands of the controls overlap a lot, so this process is not just a question of setting them one at a time. At the beginning, it may seem a bit confusing. Avoiding extreme changes at first or avoiding them altogether unless they come to seem really necessary is a good plan.

If this sounds tedious and confusing, in practice it is not. It is fascinating, all right. But it turns out to be relatively easy with a little experience to dial in a setting that seems nearly or completely ideal. And it also turns out that almost all recordings can be considerably improved in this process, but each in its own way.

The process is facilitated by the existence of what I think of as "patterns of error" in recordings. Many, indeed, perhaps most, recordings make errors of similar kinds. Orchestral recordings tend to have a much closer and upfront perspective than a concert listening position. This makes them brighter than reality, more present, and less warm and full. But the extent of this—or even whether it happens—varies, depending on the recording. Once the overall pattern becomes clear, then it becomes quicker and easier to dial in the right settings for each one.

Along with orchestral music and the human voice (though really natural vocal recordings are hard to come by) and pink noise for some purposes, the piano is a good way to check balance smoothness and accuracy—assuming you have a vivid memory of what concert grand pianos actually sound like. This is particularly useful if you have an actual piano handy. The instrument covers such a large frequency range, and each register has a distinctive character that changes in a more or less standard way as one runs up the piano from bottom to top; even note by note there is distinctive, varying timbre. In effect, one checks the entire audible range all at once listening to full-range piano music.

Listen carefully to the notes from one octave above middle C to three octaves above. Rare, indeed, is it for two different systems to sound the same here—or to get it right. And the lower frequencies tend to be highly variable, as well. There is much more to

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Interestingly, speaker designers who have done substantial comparisons with live sound often end up making speakers that are somewhat warmer and fuller than measurement-neutral. And even the would-be "scientific" setters of standards have ended up with a "target curve" in power response that rolls off the higher frequencies. The problem is that how great a deviation from neutral is needed varies from recording to recording. But with the Loki Max you can do such compensations for a recording for yourself. Expecting one speaker design to work for all recordings is a nice dream. But it is just not going to happen in detail. But you can seize control for yourself with the Loki Max.

Frequency Response: Important but Overlooked

Why should audio people be so interested in frequency response? This goes back to a fundamental (and incontrovertible) mathematical fact. A signal-transmitting device that has no nonlinear distortion has a behavior completely determined by its frequency response and its phase behavior. And it turns out that phase behavior is in most respects secondary in audible significance to frequency response (not completely insignificant but less significant). Moreover, in many cases phase behavior is itself determined by frequency response in so-called minimum-phase systems (which include most electronic devices). This means that if you correct frequency response using a minimum-phase EQ device like the Loki Max, you are most likely going to be improving phase behavior as well. (Speakers with higher than first-order crossovers are not minimum phase, and if you want to make them phase perfect, you have to do some non-minimum phase correction, usually with DSP.) For non-minimum-phase correction, the phase changes of the Loki Max will be harmless in any case. And what is absolutely certain is that if the frequency response is not what is desired, then the sound won't be, either. No matter what, the Loki Max opens up the possibility of better sound.

And think of how many possibilities there are. Consider how many settings there are of the Loki Max, with all controls either at "0" or boosted or attenuated by one, two, or three clicks, perhaps differently for each one. (Three or fewer clicks up or down is a small part of the range for each control—it does not move you very far from flat though plenty far enough to be heard.) There are six controls, each with seven possible positions in this situation, so there are 7^6 = 117,649 settings, which all sound different. And these are mild corrections—the total number of settings of the Loki Max with the full range of adjustments is really large. Each control has 15 clicks up, 15 down for a total of 31 positions, so the total number of settings for all six together, adjusted independently, is 31^6=887,503,681.

The arithmetic of EQ settings can be surprising. Imagine taking a 31-band, one-third-octave EQ device and setting the controls independently, each either 0 or +1dB or -1dB. This would be a mild correction compared to the usual range offered (±6 dB). How many of these 0/±1dB settings are there? There are 3^{31}, which is a very large number indeed, a little over 617,000,000,000,000. This sort of observation makes it clear that variations of frequency response alone can account for a vast multitude of sonic possibilities, never minding all the other things that affect sound.

So, in case you were wondering, why audio reviews do not go on and on about the details of frequency response, since it counts so much and varies over so many audibly different possibilities, part of the answer is that there are not enough words to cover anywhere near all the possibilities which are easily audibly distinguishable. In effect, reviewers, who are after all writers, find it hard to describe the differences. They can hear the differences—anyone can hear the differences—though deciding which possibility is right is more difficult, especially in the absence of a comparison signal. If one cannot describe the differences in words because there are no words to describe them, there is a natural tendency not to emphasize them.

This goes some way towards explaining how it can be that so many reviews describe some speaker or another as "neutral," even though any two different speakers so described likely sound a lot different from each other. When people talk about different "presentations," what this tends really to mean is that there are no words for the differences. It is a limitation of our language in describing situations which vary over vast numbers of possibilities. Describing timbre in all its aspects is something like the proverbial describing the taste of an orange. Sound perception is in good part nonverbal and not verbalizable, as it were. But that does not mean that the nonverbal things are not real! Hearing detailed tonal character calls to mind Wittgenstein's dictum: "Whereof one cannot speak, thereof one must be silent." But the unspoken indescribable things can be of vital importance.

This situation is unfortunate—it makes audio a rapidly moving target. But again, this shows the role of the Loki Max. You get control over the frequency response at least in broadband terms, and this control is surprising-

ly effective. There are limits to what you can do. You cannot make a close-miked recording sound like a recording made with a Blumlein pair of microphones, or vice versa. But frequency response is so important in musical terms that you can do a lot to help what you are hearing sound like what you ought to hear or think you ought to hear.

Once you get used to doing this, to "tuning in" on recordings, it becomes automatic and very fast to change things (especially since you have remote control). And I have found it almost addictive. I have been correcting speakers and speaker/room combinations by EQ for a very long time, and I am surely used to the idea and the utility of EQ, and I have used for a long time various devices that adjust balance of recordings in a broader-band way, including the Schiit Loki Mini+. But the ease and effectiveness of remote controlling with the Loki Max the broadband balance of recordings adds an additional dimension to the situation. One could deal with the issue *in situ*, on the fly, as one listened to the openings of pieces and then sit back and enjoy the result. The change from jumping up and changing the EQ and then going back to the listening position to think over the change makes the remote control crucial.

Of course, one can do such things with remote-controlled DSP. But the Loki Max has advantages. First of all, there is a lot to be said for leaving the signal in analog if you are dealing with an analog signal to begin with, e.g. from a phono preamp or from a DSD source (digital EQ for DSD typically involves conversion to PCM so the analog alternative is especially attractive, getting rid, as it does, of a digital conversion stage). Second, the Loki Max choices of EQ frequencies and bandwidths seemed to me to work out remarkably well. (I might wish there were a narrow band at 3.5kHz to deal with the diffuse-field issue [c.f., linkwitzlab.com/models.htm]. But the 2kHz control is useful here, if not precisely on target for diffuse-field compensation). The tailoring of the device to musical purposes is very well done, indeed. I think that anyone who cares about the tonal character of the music they are listening to will find the Loki Max immensely rewarding. And this is *de facto* going to be everyone, whether or not one realizes in advance how much one cares!

The Overall Picture

In the platonic ideal of audio, people who are making recordings can hear exactly what their recordings sound like as they go along, get them exactly as they like, and then the listener can play them on an ideally neutral system, so that the sound heard on playback is exactly what was intended. But in the world as it is, this is only a dream. The monitoring systems are not going to match the home-playback systems exactly, nor indeed going to match other monitoring systems (as we have already discussed). Time pressure often precludes getting exactly what the makers want, even if they knew what they were getting exactly. I suggest a look at this, to get an idea of how, even at the highest level, things do not go slowly and carefully with everyone involved knowing exactly what the sonic result will be (youtube.com/watch?v=j3SEW63L-saM&t=906s).

Add to this that recording engineers—even of the most serious and dedicated sort—are subject to pressure to meet ideas of "commercial sound," pressures which often take some toll. Everyone is trying to do his best no doubt, but the whole process is not reliably going to produce recordings that sound ideal and surely not ideal on any particular playback system. And of course, there is also the issue that perceived response depends on volume level, which also is likely to be different at home than in the recording studio (where monitoring at high levels is common).

It is worth noting that, in fact, there is a massive movement nowadays in high-end audio *not* to hear what is actually recorded. Speakers with contoured response, enthusiasm for vinyl playback, which, however wonderful it can sound, introduces "flavor" from the differences between phono cartridges, and, among other things, enthusiasm for high-output-impedance amplification, which alters frequency response, and cables that change balances (or even allow them to

be adjusted!), all adds up to people wanting to alter the recorded sound, without always really admitting they are doing so. The point is not that this is wrong, but that it is terribly expensive and also uncontrolled to try to alter what you are hearing by making sequences of equipment changes. (I have to admit that I am not immune to this in one direction: I own more than 15 pairs of more or less full-range speakers.)

In this context, it is sensible, indeed, to approach the problem with one piece of equipment that lets you make changes that are under your instantaneous control and that are also instantly reversible. We may often want to hide from what the sound actually is on a commercial recording—almost all of us have wanted to do this on occasion—and yet still hear the musical content. But how much better it is to be able to do this with pushing a few buttons on a remote control—the Loki Max lets you move the individual band settings up or down at will via the remote control's buttons—than say to buy a high-coloration amplifier, if for no other reason than that it will suit some recordings (but not others). One size does not fit all. But with the Loki Max, you can change the modifications yourself, quickly and easily.

In Conclusion

Over the decades, audio has been very successful at reducing nonlinearities, nonlinear distortions. Even speakers, which historically were a major source of distortion, have been improved to the point of low distortion, indeed, if not so low as the all but vanishingly small distortion levels of electronics. This is good because such distortions are intrinsically anti-musical.

But if the goal of audio is, as I think it should be, not just to hear pure undistorted sound but also to hear the sound as it originally was, then frequency response is crucial. And in this sense, the almost total elimination of non-linear distortion has brought detailed issues of frequency response to the fore. The old familiar matter of frequency response has turned out to be not only basic but hard to deal with, if dealing with it means getting close to accuracy within the actual thresholds of perception.

In this situation, the Schiit Loki Max is a device which is all but automatically recommended for every system. It addresses a basic issue to enormously good effect and without doing any damage in any other direction, and the price is very moderate in the general context of the high end and for the quality offered.

You need one of these! Even if you think your system is "neutral," you need to take control of the sound of the recordings you listen to, from whatever source. You will be glad you did. tas

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Muse Kastanovich

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Analog cables: Shunyata Delta V2 RCA, Kimber Hero, AudioQuest Mackenzie and Yukon XLR interconnects; Shunyata Delta V2 and Alpha Core Goertz MI 2T bi-wire speaker
A/C power: AudioQuest NRG-Z3, NRG-Y3 and Blizzard cables, Shunyata Venom NR-V10 and NR-V12 cables, AudioQuest Niagara 1200 and Niagara 3000 conditioners, Audioprism Power Foundation III, isolation transformers for network gear

techniques, including 1930s-vintage single-ended tube, traditional Class A solid-state, Class AB bipolar transistor, MOSFET, direct digital, and, yes, even cutting-edge GaN Class D amplifiers, have the potential for great sound. That is, if they are designed with care and attention to detail and built with high-quality parts and power supplies. This, Alberto states, is what he is aiming for; he designs all circuits himself, 100% from scratch.

But the proof is in the pudding, or should I say the listening.

Dettagli di Design

The AGD amps are manufactured in California; even the chassis are made by a supplier there. The $5500 Tempo is AGD's first power amp without a GaN Audion tube, for a more accessible price point. The Audion looks like a tube and glows like a tube but is not a tube. Rather than creating some kind of imposter, Signore Guerra wanted an attractive package for his GaN module that could be easily upgraded to a new version when available. The GaN module in the Tempo can be upgraded, too, though you would want a dealer to do that for you, since the chassis has to be opened.

The Alto preamplifier and Tempo power amplifier are housed in petite chassis finished in an understated black. In fact, both preamp and amp fit side by side on a standard 24"-wide rack shelf (and they aren't deep, either). The chassis are made from a single piece of aluminum, which makes them vibration resistant. For those who want a flashier look, you can order the silver finish or the polished chrome (or get a monoblock model with a GaN tube sticking out the top). The preamp has subtle orange/gold glowing lights around six control buttons, and the display is the same color when on—definitely a vintage look, in spite of the modern technology packed inside. They have substantial feet, which minimize vibrations. To increase damping, I placed a single cornhole-beanbag on top of each unit, which you can get away with since they have no vents and do not run hot. (The Tempo was never more than slightly warm in use.)

For those who want a flashier look, you can order the silver finish or the polished chrome (or get a monoblock model with a GaN tube sticking out the top).

The $4995 Alto has a linear power supply for the analog stages and a separate switching power supply for the digital control sections. The Tempo has a switching supply, but Alberto told me that allows it to respond more quickly to current draw from the power stage. It has multiple linear regulation channels coming off the main supply. Traditionally, switching power supplies were shunned in audiophile circles. But my Cambridge CXN v2 streamer/DAC uses one, and it sounds fantastic, so I certainly have

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lost any prejudice I might have had against them. The Tempo uses the same circuitry in its power supply Alberto uses in his more expensive models but lowers costs by employing a single power supply for both channels.

Both units have power switches on the rear (rocker) and the front. Power, as well as volume, input switching, and other functions can also be controlled by the stylish Apple remote included with the Alto. On the rear, the Tempo has a single pair of binding posts along with two small switches, one to select between mono and stereo operation, and another to choose between RCA and XLR inputs. The preamp has two pairs of RCA line-level and one pair of XLR inputs. It also has an mm or mc phono input on RCA. (I did not have a turntable on hand to listen to phono.) There are also three analog outputs: one XLR, one RCA standard, and one RCA home-theater pass-through (customizable), which should make bi-amping or adding a subwoofer easy as pie. The circuitry is fully balanced and DC coupled, including the passive resistor-ladder volume control.

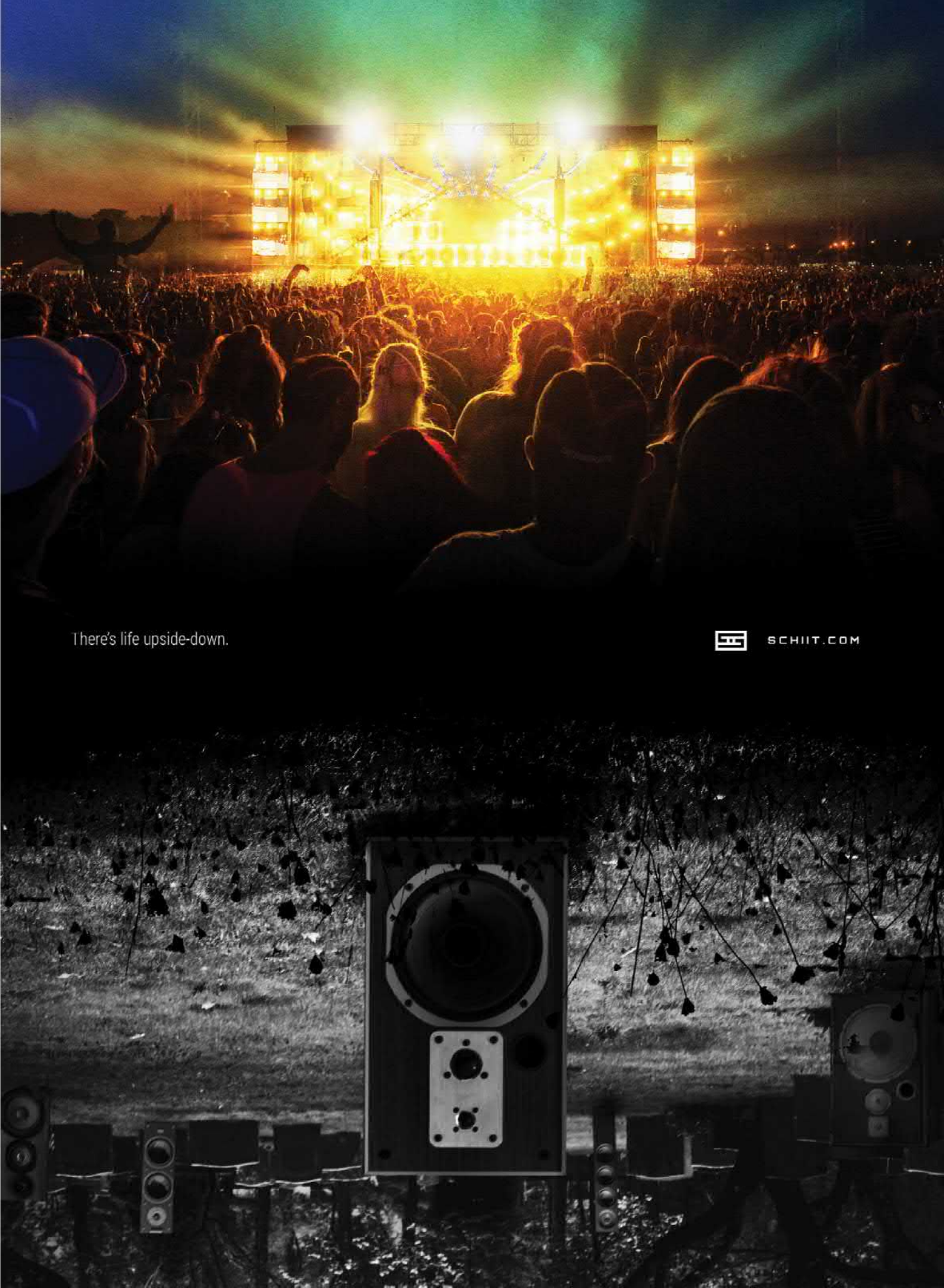
Listening at the Speed of Sound

I set up the Alto and Tempo in my listening room with their included, premium-looking power cords, and started looping music at medium volume. While components (and even cables) are breaking in, one should not listen closely for the first 50 hours, but I couldn't help notice something sounded wrong. After two full days, I sat down in earnest and scrutinized the sound, and yes, something had to be changed. I tried different interconnects—no improvement. Then I swapped out the AC cords for AudioQuest NRG-Z3. Wow, they sounded like completely different amps, much more like something worthy of coverage in TAS. I can appreciate AGD's desire to add to your purchase value with touches like free premium power cords, Pelican flight-cases, and protective cloths. But the sound of its cords does not flatter the amps—never use them. I have found, with digital components and Class D amps, power cords can make a large difference. Purchasing good power cords at this price point should not be considered optional. The NRG-Z3 at around $300 is a sensible choice, and pricier options, like the AudioQuest Blizzard I tried later, may perform even better.

I changed from AQ Mackenzie to Shunyata Delta v2 interconnects, and the sound was slightly brighter but not too bright. These amps are very sensitive to cable changes—not always a bad thing and an indication of high-resolution potential. Then I discovered high-frequency noise when XLR cables were not connected between them. So, I left the XLR cables connected even when choosing RCA input on the Tempo. To be fair, my house has old wiring with no true grounded outlets, which AGD says not to use. However, I'm sure some other listeners out there have vintage wiring at home, too.

On the incredible "Sting Variations" by the Tierney Sutton band from one of my recent jazz favorites, *Songs by Sting and The Police* (Qobuz 24/96), the sound was compelling and lively. Piano is one of the most telling sounds to listen to, particularly for someone like me who has spent untold thousands of hours listening to it live in choir rehearsals and performances. Some recordings are much better than others, however. It's not just the direct sound, but also the reverb reflecting off the walls. When searching for the absolute sound, whether in a system or a particular component, there is no mistaking whether what you are listening to has the genuine gestalt of a live piano or not. The AGD duo did.

Tierney's voice was clear and detailed and conveyed all the subtleties of emotion and narrative that she was putting so much effort into creating. All other instruments had the correct timbre and weight in the mix, as well; everything could be picked out as a unique, individual part of the ensemble. The low and midbass were a bit light compared to my Stamina amps, but the upper bass was nice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and prominent through the Tempo, though I felt the whole bass region was smoother and more satisfying with my single-ended Class A amps. Other than a touch of brightness, the AGD combo had a nice even-handed treatment of the whole frequency spectrum. The rest of my system is already geared to accommodate my slightly bright amps, though, so the result was a very natural sounding balance in my listening room. The superb Shunyata Delta v2 speaker cables that I was using tend a touch towards brightness, too, though they do so many other things well I could not resist using them here.

The Tempo boasts a power-module PWM frequency of approximately 800kHz, which is beneficial for a few reasons. Does the amp sound "fast"? Yes, it does. Putting on Robbie Robertson's *Music for the Native Americans* (Tidal MQA), many elements were so quick and agile and beautiful that the second and third tracks literally brought me to tears. Light of foot and deft in all movements, it reminded me of watching the young women's "Fancy Shawl" or "Jingle Dress" competition events at the Gathering of Nations Pow Wow here in Albuquerque every year (the largest Native American pow wow in North America). The participants seem to float on air; you can hardly even see their feet touch the ground—so light and graceful are their movements. The AGD left the overall impression of keeping up with transients and rhythms no matter how fast they came—no doubt a happy result of the great speed and microdynamic capabilities of the amps bringing out the greatest qualities of the recordings.

As you move further up the high-end ladder to mid-price, like these amps and above, sonic differences get smaller but no less important. (Many small differences can add up to a large subjective difference.) I have been reviewing some very affordable gear recently, and amps in this league require more sophisticated competition. AGD, finally, offered something that could compete with the Stamina single-ended Class A MOSFET integrated amps that I built (design based on Nelson Pass' Zen and Bride of Zen amp/preamp combo, which would have to sell for somewhere around $10k–$20k per pair if offered commercially).

Switching back and forth quickly, but also judging from what I remember of my reference amps, the Stamina still takes the prize. But it is important to remember that the sonic differences were small—a big compliment for the AGD gear! It is the most affordable preamp/amp combo that can come close to sounding as good as ultra-purist, low-feedback, Class A amplification, which is quite impressive. But how does the Stamina sound better? A concept mentioned

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recently in TAS was "inner glow" from the music. Yes, that is one area in which the Staminas were better, though the AGD's were no slouch in this department, either. Good examples are "Night Again" from *Safe Journey* by Steve Tibbetts (Tidal MQA), or "Quartet" by Steve Reich (Qobuz 24/96), a three-movement avant-garde classical piece written for two pianos and two vibraphones or marimbas. Both are very rhythmic, but with blossoming, floating overtones and reverb from either plucked strings and drums (Tibbetts) or hammered strings and mallet instruments (Reich). Glowing, indeed (even with no tubes)! The Reich is gorgeous; it has more dissonance and complex harmonies than most of his pieces, but always those phenomenal lively rhythms (he studied African drumming before he ever studied classical composition).

Imaging and soundstage are other areas that impressed more with my SE amps, including the illusions of individual performers, room size, and stage depth. However, and Alberto even mentioned this during our discussion, it is not fair to compare a single-chassis stereo amp to monoblocks in these departments. The monoblocks will always perform better, since there is zero crosstalk between the channels; they are physically and electrically separated all the way back to the power conditioner. So AGD's own monoblock models surely will perform better here. Or you could purchase a second Tempo and use both in bridged mono mode.

Conclusion

It's no secret that I have become hopelessly addicted to low-power, ultra-simple, single-ended Class A amplifiers, thanks to their immediate, detailed sound. However, if for some reason I needed to live with different amps for a long period of time, I could see myself being happy with the AGD Alto preamplifier and Tempo power amplifier. That is high praise, indeed. So, yes, these units are both recommended as good options in their price range, and they sound great together. They are the most affordable and compact offerings from AGD, so I have no doubt the company's pricier models offer even higher performance, as they are based on the same circuits but with mono power supplies. The Tempo is just more proof that you don't have to have gigantic heatsink fins sticking out of your amp (or glowing tubes) to get superb high-end sound and a decent amount of power. This pudding is tasty, not too hot and not too cold. Though, certain friends of yours might be more impressed by big fins. *In avanti e verso l'alto*! TAS

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Dynaudio Confidence 50 Loudspeaker

Built to Scale

Andrew Quint

Possibly, the subspecies of audiophile with the toughest row to hoe is the one that prioritizes musical *scale* over other sonic parameters. We all have a pretty good idea of who these listeners are. They're the ones with a subscription to the local symphony orchestra, who have traded in their Schubert Eighth tickets for Mahler's Eighth, requesting Row G on the main floor instead of Row N in the second balcony. At an outdoor concert, they're not content to lounge on a blanket and casually take in the performance via the Jumbotron and a bank of speakers set up a quarter mile from the actual stage; they have fought their way to the front to stand just yards from the musicians. This kind of listener wants the visceral sensation of dynamic sound, both non-amplified and otherwise. They are looking to be "blown away" and to soak up the shared sense of occasion that comes with being in the middle of a musically receptive crowd.

At home with their audio systems, they don't want the presentation of the music they care most about to seem miniaturized or diminished. What they want is the power and acoustic magnitude of the real thing—and, more often than not, they're disappointed. One has a chance of approximating realistic scale if your listening room is palatial and your budget for audio equipment, loudspeakers in particular, is on the kingly side. You'll encounter this approach at audio shows; there are always a few exhibitors that have sprung for a ballroom to impress with a million-dollar mega-system. But in a typical domestic setting—even if you're fortunate enough to have the financial wherewithal to do so—most will wisely resist the temptation to shoehorn physically large speakers into a room they'll overwhelm.

These considerations were in play when Robert Harley asked for a review of a speaker in Dynaudio's Confidence range, which relaunched in 2019, leaving it to me to choose which model to evaluate in my 225-square-foot room. There may be 10' to 12' ceilings, but by no stretch of the imagination is there anything "palatial" about the space. The Confidence Series includes four models, a stand-mount (the Confidence 20, $13,000/pair) and three floorstanders, the Confidence 30, 50, and 60, priced at $24,000, $33,500, and $50,000 respectively. The choice was clearly between the 30 and the 50 and, in part because I liked the symmetry of the loudspeaker's driver configuration, I went for the latter. A mistake? I hoped not, as shipping costs for an item as heavy as this are not inconsequential these days.

How heavy? Four-hundred-and-twenty pounds for the two loudspeakers on their shared pallet, and it could have been worse. The wood crates that the Confidence 50s come in are fabricated from thin (¼") plywood, robustly braced but a far cry from the sort of lumber employed by Wilson or Magico for their shipping containers. What keeps the speakers safe for their journey from central Denmark to you is the exceptionally dense foam that embraces them within the crates. The loudspeakers arrived a couple of days ahead of a visit from John Quick, Dynaudio's VP for Sales & Marketing for the Western hemisphere, who got them unpacked with my (minimal) assistance and effectively set up, though not without some effort. When all was said and done, the speakers were 19" from the CD-filled shelves behind them, 94" apart, center-to-center, and 112" from the prime listening location. In position, the speakers really don't overpower a typical room, especially with the oh-so-Scandinavian Blond veneer finish of the review samples. The Confidence 50s stand a smidge over five feet tall on their outrigger bases, but the front-facing aspect measures no more than 8.5" across, and the speaker has a cross-sectional teardrop shape—it tapers from front-to-back—that also helps to moderate any perception of massiveness.

Whether or not you feel the Confidence 50 wears its weight well, this is a box with a substantial internal volume and five drivers incorporated into a 3-way system—it's a *big speaker*. In the center of the driver array is the latest iteration of Dynaudio's Esotar soft dome tweeter. Enthusiasts who have followed the

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Type: Three-way dynamic loudspeaker
Loading: Bass reflex, down-firing port
Driver complement: 1.1" soft dome tweeter; 6" midrange (x2); 7" woofer (x2)
Frequency response: 35Hz–22kHz (±3dB)
Sensitivity: 87dB
Impedance: 4 ohms (nominal)
Dimensions: 8⅝" x 59½" x 15¾"
Weight: 109 lbs. each
Price: $33,500/pair

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Confidence line since its introduction in 1991 will know that the presence of just one tweeter is a significant departure, as earlier models always had two; it's no surprise then that the new high-frequency driver looks a lot different from its predecessor. The Esotar 3 features a substantially larger rear chamber with a dimpled plastic inner dome dubbed "Hexis" that replaces the felt ring found in previous versions. This is claimed to reduce resonances that can result in frequency overlap with the flanking 6" midrange drivers. Those transducers, which also get their own sub-enclosures, employ the manufacturer's proprietary diaphragm material, Magnesium Silicate Polymer (MSP). An innovation seen with the new midrange is the "Horizon" surround that continues the shape of the cone out to the extreme edge of the driver, increasing its effective surface area. A pair of 7" NeoTec woofers completes the driver complement. These sport a copper voice coil, a pure neodymnium magnet system, and MSP for the membranes.

The successful integration and overall performance of these transducers in all the Confidence line models is assured by the DDC (Dynaudio Directivity Control) lens, an aluminum wave guide that's attached to the speaker's Compex baffle. This key design feature is responsible for a marked lessening of floor and ceiling bounce—a reduction of room interactions in the vertical plane—that has a lot to do with the admirable performance of these large loudspeakers in moderate-sized rooms. Of great importance, as well, is the 50's downward-firing bass port, designated a hybrid system because the external "mouth" of the system—two slots on either side of the loudspeaker's bottom surface—is actually "an extension of the internal port length and therefore part of the port tuning," as John Quick explained it to me.

The redesigned crossover employs second- and third-order slopes with handoff frequencies of 200Hz and 2.86kHz. There's a single pair of WBT Nextgen binding posts positioned very close to the floor that welcomes spades, banana plugs, or bare wire. Dynaudio provides both rubber feet or spikes to attach to the outrigger base, which would seem to reflect some ambivalence about whether the design philosophy is to decouple the speaker from the floor or to direct vibrational energy there. Either way, the speaker is extremely easy to level, thanks to four knobs on the top surface of the base that will adjust the height of the footers. Grilles are provided, but John Quick pointedly left them in the crates. The owner's manual actually *tells* you to do any serious listening with the grilles off, which is refreshing. Besides, many will find the sculpted look of the DDC apparatus appealing.

The Confidence 50s were powered by one of two sets of solid-state amplifiers, Pass Labs XA 60.8s and Tidal Ferios monoblocks. I listened mostly to digital sources—a Baetis Reference 3 server, Theoretica Applied Physics BACCH-SP adio stereo purifier, and a SonyX1100ES universal player. All utilized the DAC in a Tidal Contros digital linestage. Analog cabling was Transparent Audio Gen 5, and digital wires included Shunyata (AES/EBU), Pangea (TosLink), Apogee Wyde Eye (SPDIF), and whatever it is they sell for $20 at Guitar Center (SPDIF).

Critical listening commenced and I went straight to Big. Mahler's Third is the longest symphony in the standard repertoire; its subject is nothing less than the totality of what the composer had learned about heaven and earth over the first 35 years of his life. The opening movement, which alone runs about 35 minutes in a typical performance, is entitled "Pan Awakes; Spring Marches In," and it begins with eight French horns in unison blasting a common-time theme that follows the rhythmic and melodic contours of the main tune from the finale of Brahms' Symphony No. 1, except starker and more resolute. After six bars alone, the horns' declamation is punctuated by brutal accented notes on beats two and three from strings, low brass, and percussion. The French horns then divide into two groups of four before retreating beneath quiet chords from trombones, tuba, and contrabassoon. This entire introductory gesture takes only around 30 seconds to unfold, yet the vastness of Mahler's conception for the next hour and a half is laid bare. My favorite recording, in no small part because of the sound, is the one from Michael Tilson Thomas and the San Francisco Symphony on that ensemble's house label, SFS Media. Better than any loudspeaker I've had in my room, the Confidence 50s realized the immensity and emotional power Mahler was going for—an epic scale consonant with the composer's encompassing vision.

The Confidence 50s realized the immensity and emotional power Mahler was going for—an epic scale consonant with the composer's encompassing vision.

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er music"—Rachmaninoff's *Symphonic Dances* from Zinman/Baltimore on Telarc or Bernard Haitink's late-in-life reading of the Shostakovich Symphony No. 15 with the Concertgebouw on an RCO Live SACD—the experience was the same. There was a sense of nearly unlimited headroom that, before long, resulted in my no longer tensing up in anticipation of the climatic passages I knew were coming. It was the same with the most exuberant big band recordings, like those of Gordon Goodwin's ensemble. A trumpet section playing full tilt blazed but didn't blister; the edgiest sax solos were aggressive but not assaultive, thanks to the 50's unfazed assurance. Virtuosic small-group electric jazz—could I be referring to anyone other than the Yellowjackets?—was as irresistibly energetic as I've heard it.

Serving the metric of musical scale does not, of course, mean getting only the grandest moments right—it also involves more subtle distinction between big and small, loud and soft, fragile and robust. My two favorite chamber music recordings—the Brahms/Bartók/Debussy program from violinist David Abel and pianist Julie Steinberg taped by David Wilson 35 years ago, and a 2021 Cedille Records release featuring the Brahms Clarinet Sonatas played by Anthony McGill, accompanied by Gloria Chien—contrast perfectly the disparity in the acoustic space occupied by each the two participants. Additionally, if the recording engineer has captured the reverberant characteristics of the performance venue, be it an audience-filled concert hall in New England or a large empty soundstage at a German broadcast studio, the Dynaudio speaker will discern these cues.

The ability of the Confidence 50s to represent the majesty of large-scale acoustic events without exaggerating the size of smaller musical objects will be evident with plenty of quality amplifiers rated under 100Wpc, but there's no question that these loudspeakers love power and will bloom to their full potential when driven by big amps. I listened to several of the dynamically challenging selections noted before (the Mahler, Gordon Goodwin, and Yellowjackets selections) plus Kevyn Lettau's *Songs of the Police*) with the Dynaudios powered by both the Tidal amps (300Wpc into 8 ohms, 585 watts into 4 ohms), as well as the 60Wpc into 8 ohms (120 watts into 4 ohms) Pass Labs monoblocks. Though the XA 60.8s have been reported to put out considerably more juice than their official rating indicates, the Ferios monoblocks still consistently provided superior bass "grip," more startling transients, better detail in texturally complex passages, a taller image, and a stronger sense of increased dynamic headroom.

Though the Confidence 50's success with approximating the impact and presence of live music is what sets it apart from many other capable designs, the speaker also fares well with other sonic attributes that audiophiles will expect to be excellent in a $33,500 loudspeaker. Microdynamics—the subtle inflections of a singer's delivery or the nuances of a concert pianist's touch—are effectively revealed. There's excellent front-to-back layering and depth with recordings that have it, whether it's real or synthesized. There's plenty of top-end sparkle (the flutes/piccolo, bells, and harp with the Zinman / Rachmaninoff recording, for example) and when the display of instrumental color is the whole point of the music (say, Ravel's take on *Pictures at an Exhibition*) the Confidence 50s are up to the task.

Perhaps because I felt encouraged to play the Dynaudio Confidence 50s at high levels, I was eager to experiment with subwoofer augmentation to fill out the bottom octave, which is actually there on much of the large-scale material I favor. It worked well for me, in my room, with my music. But don't think for a minute that a sub is "necessary" with the Confidence 50s. It isn't—certainly not in most real-world listening rooms. Magico's CTO Yair Tamman, who helps me dial in his company's S-Sub with pretty much every loudspeaker I try out in my room, told me so. I suspect he'd let me know if there were shortcomings with the 50's bass performance.

If you have a dim recollection that Dynaudio once made larger and more expensive speakers than those in the Confidence range, you're right. They still do. The Evidence Master—over 6' 8" tall, weighing in at close to 300 pounds, and priced at a cool $140,000/pair—is available as a special order. But this behemoth doesn't incorporate the many technical advances of the Confidence line, which represents the best this manufacturer can do at a far lower price.

Apart from issues of aesthetics and value, though, the Confidence 50 brings off something I've not experienced at home before: It's a big loudspeaker that can be effectively deployed in the sort of domestic environment that might seem unlikely to accommodate it. If this product's sonic attributes match your own priorities, arrange to hear them yourself at a dealer or audio show. Prepare to be blown away.

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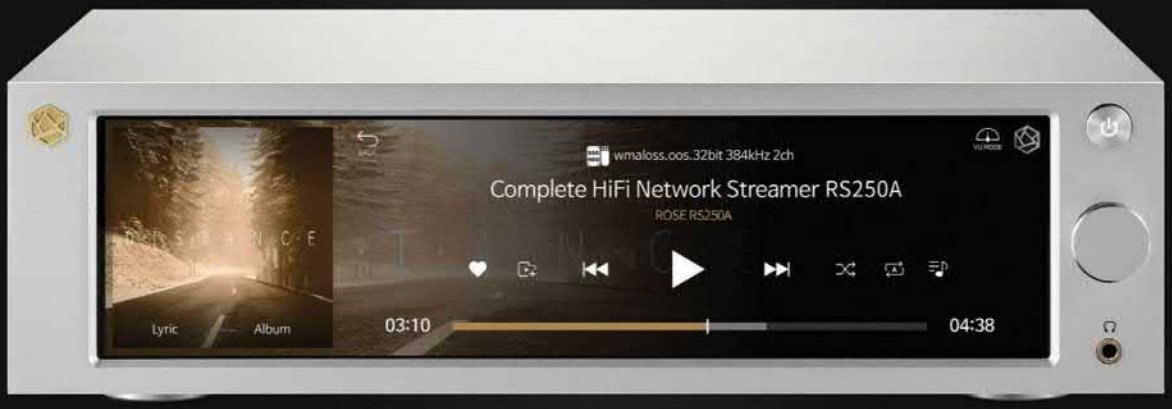

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A Quick Fix: Why Expert Setup Advice Is Always Welcome...Even for a Reviewer

OVER THE PAST EIGHT YEARS, I'VE REVIEWED 35 LOUD-speakers for *The Absolute Sound*. For roughly a quarter of these assessments, a manufacturer's representative—the sales manager, the importer/distributor, occasionally the designer himself—has visited to set up the product in my listening room.

I'll never say no if the offer is made. First, for the bigger speakers, it's safest for both the product and for me to have help with the (literal) heavy lifting. Second, it's efficient—the length of time the loudspeakers need to stay can be reduced, often by a week or two, if someone truly familiar with the product is here at the beginning. That doesn't mean that I won't continue to fuss with positioning and other variables (e.g., cables) long after that person has left but, if that's indeed the case, well, I'm further along in the process than I would have been had he not visited. Third, it's a chance to inquire in person about the product and the company that makes it. Of course, these questions, and many others that inevitably arise, can be answered by phone or email but an early face-to-face session over a sandwich can establish trust and often elicits more revealing responses. Finally, the company representative can confirm that the speaker is working at a level that he feels reflects the product's full potential.

I closely watch the companies' emissaries do their thing. I've learned a great deal in the process, and it's given me confidence that I'm doing a decent job when, the other 75% of the time, I'm on my own. Usually, set-up goes smoothly, and the company man can be gone within an hour or two. This was not the case, however, with the Dynaudio Confidence 50s, and I was never more grateful for the in-person expertise of the manufacturer than I was for that of John Quick, Dynaudio North America's VP of Sales & Marketing.

Getting the Confidence 50s out of their carefully considered crates and roughly positioned in my listening room took no more than 45 minutes, and I was beginning to think that there'd be time to kill before John Quick would head back to his hotel. Quick had already commented favorably on the room's acoustics based on how he was hearing his own voice, and we maneuvered the speakers, on their not-spike footers to the locations where my reference Magico M2s usually reside. I found Kevyn Lettau's version of "Message in A Bottle" on Roon and turned the volume up to a moderate level. Quick's face darkened.

I won't recount all the trials and tribulations of the next two-and-a-half hours—we've all been there—but it was a journey with ups and downs, moments of doubt and self-blame for me (Was my room not as good as I thought?) and, for John Quick, a need to slow down and methodically reconsider things. Quick called up two musical selections he uses routinely for setup that I would become very familiar with, Dominique Fils-Aimé's "Rise" from her *Nameless* album and Kevin Garrett's spare and moving "Refuse." The speakers were meticulously leveled and their position vis-à-vis room boundaries established precisely with a laser distance measurer. The sofa that's the primary listening location was moved back two inches, then returned to its starting point, then back four inches. We experimented with placing a 4' x 2' sound absorbing panel at the first sidewall reflection point on the right when the image seemed to be skewing that way and removed a switching device I was experimenting with that seemed to be degrading the sound. There were countless small adjustments to the speakers' positions, moving them closer together or farther apart, nearer or more distant from the listener. A lot of painter's tape saw action. And we were stuck. There wasn't a centered central image, the placement of the secondary vocalists was vague, and there were associated tonal irregularities.

After a moment of introspection, John wondered about the possible utility of a specific track on the 29-year-old *Sheffield/XLO Test & Burn-in* CD. "I've got that one!" I exclaimed and miraculously found the disc in seconds. On Cut 2, Roger Skoff's confidence-inspiring voice is presented in and out of phase: By moving the speakers to get the most diffuse, "sourceless" sound with the latter option, one can achieve the best spatial results with an in-phase musical signal.

It worked. Once the speaker position for the out-of-phase Skoff had been optimized, we returned to Quick's two references, and it was immediately evident that we had a "lock." The overdubbed backup vocals on "Rise" were correctly placed and acoustic bass took on volume, mass, and definition; it was now clear that Garrett was a male singing falsetto rather than a woman with an opaque, roughly textured voice.

Is there a lesson here for potential Confidence 50 purchasers, audiophiles who can't expect an in-home visit from John Quick? Well, Quick spends a lot of time making sure that the 30 or so dealers that sell Dynaudio's products are capable of handling these situations. Most critically, don't give up! There's likely a solution, quite possibly a free one, that will let a great loudspeaker like the Confidence 50s manifest its potential.

RH Comments: In my experience, it's not unusual for a manufacturer to spend long hours, even full days, dialing in loudspeakers for review. I've had many experiences similar to Andy's. The challenges he and John faced don't suggest that Dynaudios are more difficult to optimize than other brands. Rather, Andy's tale reveals the importance of proper setup, along with the value of perseverance to get the best sound from any speaker. Moreover, every set-up person has his own repertoire of test tracks—you don't necessarily need the Sheffield/XLO disc. tas

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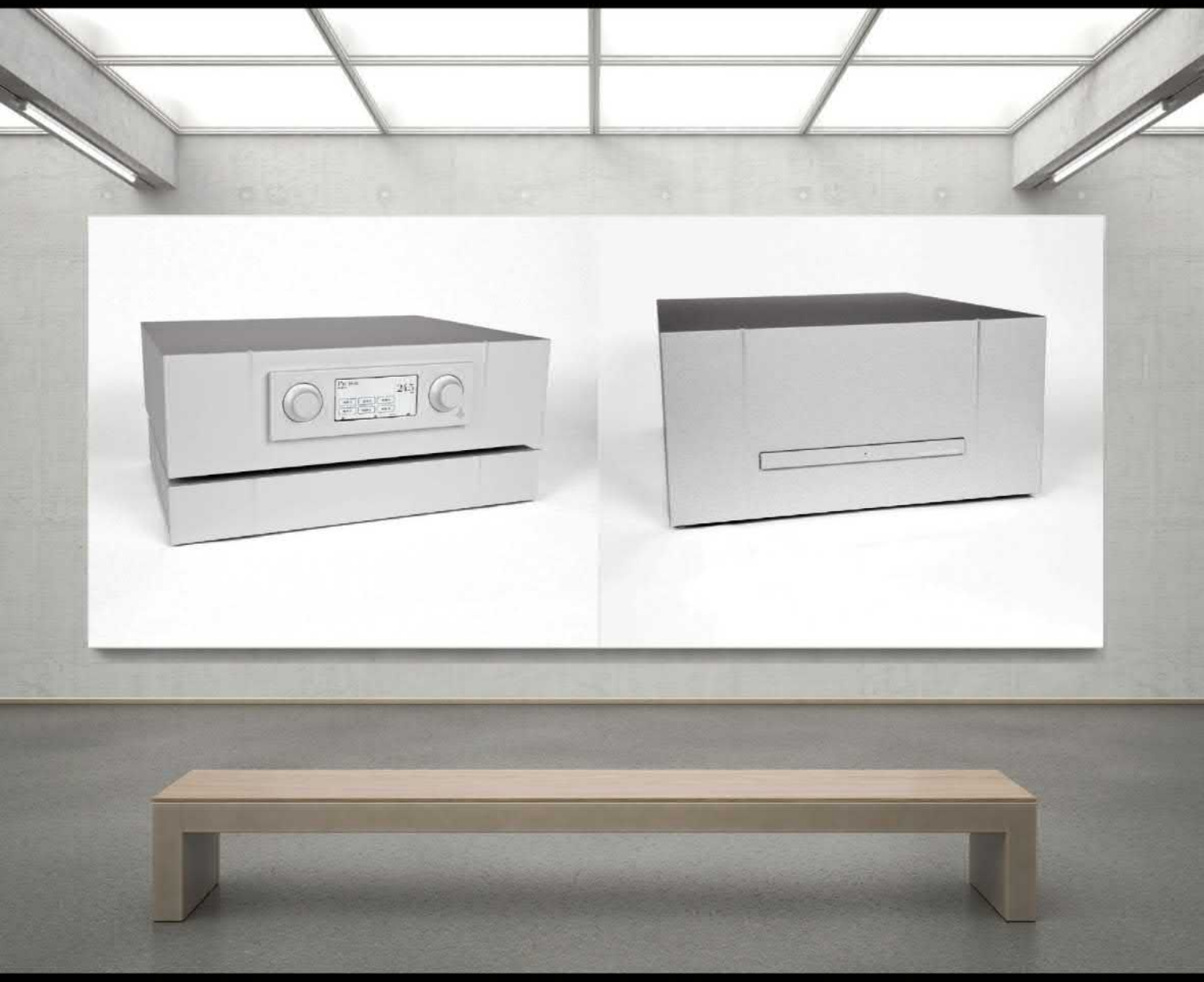

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Technics SL-G700M2 CD/SACD Player and Streaming DAC

Digital Evolution

Anthony H. Cordesman

This review is easy to write in one key respect: The Technics SL-G700M2 is an excellent sounding unit that combines a superior disc player and DAC with equally good streaming capability. It sells for some $3500, so it is on the edge of today's higher-priced units, although high price is relative. Some other combinations of a DAC and disc player sell for over $14,000; the SL-G700M2 is moderately priced by comparison.

At the same time, the sound of the SL-G700M2—like that of all the best current DACs—is superb. The sound quality of digital front ends is becoming steadily better. While the sonic nuances of given players can still be heard on most reference systems, they are often minor compared to the far greater sonic differences in other components like loudspeakers and those imposed by the listening room and position. That doesn't make such nuances unimportant, but it can mean that the real issue for a given audiophile and system is how well the nuances of a particular DAC blend in with the colorations in the rest of a system. As a result, the merits of the better digital players may be determined more by their synergy with a specific system than by the inherent differences in the sound of different players.

Having listened to a few DACs that have both digital and analog outputs, it is also clear that the nuances of an analog output stage are different from those of a digital output stage. Much of the coloration or sonic character of a given DAC seems to be the analog stage. Accordingly, this review focuses on the use of the SL-G700M2's analog outputs, and here the SL-G700M2 is outstanding for its price or well beyond it.

Listening Beyond Analog

The Technics unit is also typical of today's best DACs in that its sound quality is far better than that of the better DACs using technology that is now several years old—and far, far better than the sound of earlier digital players I'm all too aware that "digital" can be a dirty word for some audiophiles, and a second choice for others. I have at least some sympathy for such attitudes. I do still make use of my turntable and LPs. Old friends are well worth keeping, even if they do age over the years.

At the same time, I suspect that if you haven't made digital sound a key part of your system and listening habits, you either haven't really listened to just how much better digital sound has gotten over the last few years or you have assembled a mix of analog components whose colorations give you the music you want in the form you want it, rather than seeking to get as accurate and objective a system as possible.

I have several audiophile friends whose system quality depends to a great degree on how well they have matched their phono cartridge—and in one case an analog tape deck—to their particular taste in sound, and to the character of their speaker and their particular listening room and listening conditions. The resulting synergy can be very good and deeply musically involving, although it can sometimes be a bit too personal and eccentric.

Analog can also impose some real limits on your musical options. Either you have to have a vast collection of analog recordings, or you have to ignore most of the recorded music now available. The issue isn't just sound quality; it is also how you approach the world of music, and how willing you are to settle for a limited range of performances and musical choices. Streaming has opened access to a vast range of music that has never been available before and that the better new players like the Technics SL-G700M2 do a far better job of reproducing than even the best players available several

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Specs & Pricing

Type: CD/SACD player and DAC with networking
Formats supported: CD, stereo SACD, DSD up to 5.6MHz, MQA, MQA-CD, WAV, FLAC, AIFF, ALAC, MP3, Chromecast, Google Assistant, Spotify Connect, Amazon Music, Deezer, Tidal, Qobuz, Internet Radio, Bluetooth, AirPlay2
Digital inputs: Coaxial (x1), TosLink optical (x1), USB-A (x2), USB-B (x1)
Analog output: Unbalanced on RCA jacks, balanced on XLR jacks (one stereo pair each), fixed or variable level
Digital outputs: Coaxial (x1), TosLink optical (x1)
Dimensions: 17" x 3.9" x 16.1"
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Price: $3499

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years back.

I should also stress that the Technics SL-G700M2 is typical of the better and best current DACs in that does a great job of demonstrating that the hardness of the early digital players has vanished, unless it is on the original recording. The sound of the upper midrange and treble on good recordings is much cleaner, although miking the performance too closely and using a mike with a bit too much upper-octave energy is characteristic of too many modern recordings and will still be more apparent.

The same is true of the soundstage. For most audiophiles, the listening room and the speakers do a great deal to determine the soundstage. No change in a given DAC or any other part of your front end can alter that fact. The soundstage on the recording is, however, still very important, and today's best DACs do make the musical details of the stage that are actually on the recording much clearer. The soundstage is more open, the imaging more precise, and depth is reproduced more naturally. Somewhat to my surprise, the lower midrange and upper bass of given instruments and voices are also sometimes warmer and better defined.

At the same time, I find that as digital players advance in sound quality, the value of higher sampling and frequency rates is less apparent. Nothing will ever make MP3 and AAC recordings compete for the best sound quality, but older 16-bit/44.1kHz and 16-bit/48kHz recordings now sound much better. Newer 16-bit/44.1kHz recordings also sound more competitive with higher bit and sampling rates.

This said, the best SACD and DSD recordings seem to sound consistently better than PCM recordings in direct proportion to how good, and often how recent, the player or DAC is. If you have the option, go for SACD or DSD version. (And incidentally the Technics SL-G700M2 does a very good job of automatically selecting such options and clearly displaying the format it is decoding.)

The situation is different with streaming. I find the sound quality of the streaming services like Tidal and Qobuz does improve with the quality of the player, and usually improves more when you select the higher frequency and bit rates than it does with hard-disc storage. I also notice that using different computers can slightly alter the sound quality and reduce low-level background noise levels, which are generally very faint, although this can vary slightly with computer and/or service provider.

A lot of my friends disagree, but I usually prefer the sound of CDs, SACDs, and DSDs to that of the sound of the same performances played back from streaming service, although they too are often being updated in ways that improve their sound over time.

Features and Ergonomics

All these sonic improvements are audible with the Technics SL-G700M2, and I'll come to its sound quality shortly. I should, however, make it clear that its technology and ergonomics are equally well designed. It's easy to set up and use and equally easy to operate.

I am not a digital engineer and can't tell you just how far the technology in the Technics SL-G700M2 has advanced relative to its top competition in a world where new digital front ends keep emerging from so many manufacturers. I can tell you that this technology is audibly more advanced in today's DACs and that Phillip's claim that the first CD players were "pure, perfect sound, forever" now seems to be a bit of a sick joke. Digital technology is improving in sound quality at rates where "forever" in digital terms seems to be becoming shorter and shorter in analog time.

I can also tell you that the Technics SL-G700M2 has made a number of technological advances over an earlier version of this unit, and some of these advances are ones being advertised by the manufacturers of more expensive units. Technics has a pretty good summary of these improvements on its website (us.technics.com/products/network-super-audio-cd-player-sl-g700m2). It cites these advances as follows:

- Dual ESS ES9026PRO DAC chips with symmetrical placement of one L/R unit on each side and independent transmission structures.
- The filter circuit after the D/A conversion uses an amplifier circuit with a unique discrete configuration instead of an operational amplifier (op-amp) IC.
- Coherent processing technology improves the reproducibility of impulse signals by minimizing amplitude and phase deviations that occur throughout the D/A conversion process for signals up to 192kHz PCM via proprietary digital signal processing.
- A Multi-Stage Silent Power Supply that provides noise suppression in three stages: (1) high-speed switching power supply, (2) low-noise regulator, and (3) current-injection, active noise-canceling.

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- Current-injection active noise-canceling removes unwanted noise components by applying an inverse-phase current to the detected noise
- A new USB-B port that allows constant connection to a network audio server or PC for playback of high-resolution sound sources from the connected device.
- A "Pure Disc Playback" mode for Super Audio CD/CD playback. This model also supports MQA and is capable of full decoding playback of MQA files and MQA-CDs. Various other high-resolution formats are also supported, including WAV/AIFF, FLAC/ALAC, and DSD.
- The disc drive adopts a three-layer chassis configuration. Powerful vibration-damping and quiet construction, including a disc tray made of die-cast aluminum, ensure high-precision disc playback.

I can't tell you where this list places the Technics in the audio equivalent of a high-end technological arms race. I'm certain that any such ranking would be controversial, even if I were a digital engineer. Having read through the advertisements from other manufacturers of outstanding units, I can tell that other top units have similar lists. But if you're the kind of audiophile who's into bragging rights, I'd estimate no rival audiophile will know enough to challenge you over the list of advances in the Technics SL-G700M2.

Its ergonomics are also very good, and this is not true of many DACs. The Technics SL-G700M2 is unusually compact for a unit with all its functions, but it is very well built and notably heavy for its size. The front panel is unusually readable and informative. The remote, which also works on a matching Technics amp, is well labeled and works well at a distance. The disc tray is reliable and smooth, and the DAC has Chromecast to improve the ability to use streaming services. Rear connections are also clearly labeled, and the instruction manual is well designed. My only complaint, and this applies to virtually all DACs, is that the instructions are weak in helping to set it up for given streaming services. (A complaint that applies equally to most streaming services, which tend to assume you have a very simple home-computer setup.)

Sound Quality

I've already talked about most of the sonic advances you should expect from a modern digital front at this price level, and I heard them all from the Technics SL-G700M2. I really did enjoy listening to this unit. Like other the top-quality digital products I've auditioned recently, there were no sonic anomalies or areas where I heard a problem with its reproduction of recordings.

It also did very well for its price. It did not perfectly match the sound quality of a two-piece digital front end costing nearly four times as much, but the sonic differences between the SL-G700M2 and that new top-quality DAC were limited and audible only on the best recordings. They consisted of minor differences in low-level resolution and in soundstage width and depth. Many were also debatable in the sense that my judgments were a matter of personal taste. I had to listen long and carefully to hear such differences, and I suspect that they would seem very minor to any audiophiles comparing them to the sonic differences in phono cartridges or speakers.

It was also interesting to move the Technics SL-G700M2 around to listen in the different audio systems and listening rooms of my friends. Not only were the differences between the sound of the SL-G700M2 and other more expensive rivals relatively small, but it was also clear that the sonic nuances from the different speakers, listening rooms, and choices in music and recordings did far more to impose a sound character on the system the different digital players did. That's damn good performance from the Technics SL-G700M2 for what was sometimes a $10,000 difference in price.

Summary Judgement

Highly recommended, this Technics unit makes it clear that we have to take the Japanese high end very seriously. The SL-G700M2 is also the kind of unit that might change the mind of even fanatic believers in analog; it is certainly one that every audiophile who has a digital front end that is several years old should audition. It makes it clear that there have been real advances in sound quality in recent years, ones you can really enjoy.

But as is the case with every component, make your choice a quest by listening to a range of such units at a friendly dealership. Listen to other expensive units with SACDs you really know, where you can objectively evaluate the sound of different front ends, even the ones you now believe you can't afford. After all, an audio aristocrat like you doesn't go fox hunting by reading the sports section and then asking Amazon to deliver the best-reviewed fox. (Well, hopefully!) tas

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MoFi Electronics SourcePoint 10 Loudspeaker

Brilliant!

Dick Olsher

During the summer of 2021, MoFi Electronics hired Andrew Jones (AJ) as its chief loudspeaker designer. With decades of combined experience at KEF, Infinity, Pioneer, TAD, and ELAC, he is undoubtedly one of the best known and most respected names in the audio industry. His mission was to design MoFi's first loudspeaker with the aim of delivering a product that would do justice to the company's studio heritage. It became clear that it made no sense to compete at the low end, directly with previous AJ designs (e.g., ELAC) that are still out there in the marketplace. And so, MoFi gave AJ the latitude to design something new and interesting while maintaining the core principles for which he is known.

Given his previous interest and experience with concentric drivers at KEF and TAD, Jones opted for a new 10-inch concentric driver housed in a 50-liter bass-reflex cabinet capable of 40Hz bass extension. His goal was to "create a loudspeaker inspired by the needs of the mastering studio and able to reproduce as best as possible the sound I've envisioned over my 40-year career, all the while providing deep bass impact and delivering the highest-possible value to listeners."

Think of a concentric driver as a revisionist approach to box-speaker design. In a conventional two-way design, the tweeter and woofer are separated on the front baffle. The problem with that type of arrangement is that when you move off-axis, the relative distance between each driver and listener changes resulting in phase differences and response dips. In a concentric driver, this never happens. The acoustic centers of the woofer and tweeter are effectively coincident so that the relative phases of the drivers remain constant, which as a bonus also greatly simplifies crossover design.

A large-diameter concentric driver represents a difficult design problem. While a 10" woofer offers increased bass efficiency, the onset of cone breakup resonances in a paper-pulp cone presents a significant challenge to making a clean transition to a 1.25" silk dome tweeter at a frequency of 1.6kHz. AJ had previously worked with smaller concentric drivers and was never in a position of having to push a soft-dome tweeter that low, or alternatively, a large woofer that high. He realized that with "the right kind of pulp with the right profile, you can push the first breakup mode up to about 3kHz or 3.5kHz, and it's nicely damped." Initially, the available woofers he tried weren't the right profile or the right coil diameter. That started the process of paying to tool up different cone shapes with low-profile surrounds. since a conventional roll surround would have created undesirable treble reflections. This turned out to be a slow procedure. Sorting out the driver issues, magnetic circuits, crossover design, and production in China took almost two years to complete. Was the end result worth the effort? Spoiler alert: a resounding yes!

The $3699 SourcePoint 10 (SP10) with stands (a $499 option) arrived on my doorstep preceded by a considerable online buzz, largely positive. Naturally, I was curious to find out what the excitement was all about, so the SP10s were quickly installed in listening room #1 (14' x 7.5' x 19'), replacing the Fleetwood Sound Company DeVille. The large retro-looking cabinets seemed awkward at first but settled in nicely on the matching stands. Both vertical

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Specs & Pricing

System configuration: 2-way, vented box, concentric driver
Tweeter: 1.25" wide-roll soft dome
Woofer: 10" paper cone
Frequency range: 42Hz–30kHz
Nominal impedance: 8 ohms (6.2 ohms minimum)
Sensitivity: 91dB/2.83V/1m
Crossover frequency: 1.6kHz
Max power input: 200W
Dimensions: 14.5" x 22.5" x 16"
Weight: 46.2 lbs.
Price: $3699 (stands, $499)

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Associated Equipment
Power Amplifier: Quicksilver Audio V4 and Curcio upgraded Paoli 60M monoblocs, Will Vincent ST-70, Pass Labs Aleph 5, Berning EA-230, NuPrime Audio Evolution STA
Preamplifier: Lector Audio ZOE, Don Sachs Model 2, Wyetech Labs Coral, Velvet Touch 396a, Ed schilling The Truth, Blue Velvet DIY
Phono front end: Revox B795 turntable, Audio-Technica AT-OC9ML MC, Pentagon PS3 phono stage
Digital front end: Schiit Audio Yggdrasil+ OG DAC, MacBook Pro laptop running Audirvana 3.5 software; Qobuz streaming
Cable & interconnects: Kimber Select & KCAG, Acrotec 6N, FMS Blue interconnects; TARA Labs RSC 500 Prime speaker cable
Accessories: Sound Application CF-X & TT-7 power line conditioners; ALLDAC USB 3.0 Isolator; Herbie's Audio Lab tube dampers

and horizontal cabinet orientations are possible according to AJ, and he expects that for studio-monitoring applications a horizontal orientation may be preferred. However, I strictly used the SP10 in a vertical orientation. The sculpted 2"-thick MDF front baffle is designed to minimize diffraction effects from cabinet edges and shows an uncommon attention to detail at this price point. Magnetic grilles are provided for cosmetic reasons but are not intended for serious listening. Two bass-reflex ports are located on the rear baffle, which tune the cabinet to a frequency in the low 40s.

It quickly became clear why the SP10 had generated such a positive reaction. The bass range was extended and well defined, belying its bass-reflex origins. In particular, the full-bodied upper bass and lower midrange lent orchestral music a sense of gravitas that would have put most stand-mounts to shame. Soundstage transparency was exceptional, highlighting convincing depth and width perspectives. The SP10 immediately impressed me as being low in distortion products and blessed with a smooth and detailed midrange. But it was not exactly neutral sounding, as the tonal balance seemed to be tipped up in the treble. Tweeter dispersion, aided by the woofer cone acting as a wave guide down to about 300Hz, pressurized the listening room, generating a tidal wave of air and brilliance. The overall presentation was drastically different than that of the DeVille. If the latter could be defined as neutral or matte in character through the upper octaves, then the SP10 may well be said to impart significant sheen or gloss to musical textures.

At this point, I was curious to measure the SP10's frequency response to look for an objective correlation with my first impressions. My measurements were conducted at one meter and at a few inches from the tweeter. In an email exchange, AJ pointed out that nearfield measurements of a concentric driver can generate artifacts, and that even one meter is not totally representative of the far field, in that it does not fully capture the vent output, baffle-step effect, and room gain. AJ is, of course, right, and for these reasons and to avoid room modes in small rooms, I typically only consider the frequency range at one meter above 300Hz. So, what did I discover? The range between 500Hz and about 10kHz was quite uniform indicating excellent driver integration. There was no response lift in the octave spanning 4 to 8kHz, which typically gives rise to a bright tonal perspective. However, the treble response rises above 10kHz, which accounts for the added textural gloss and sheen.

Since there is no treble control provided, I found it beneficial to toe-in the speakers so that the tweeter axes intersected in front of the listening seat. That significantly reduced the perceived treble level. The NuPrime Evolution amp that sounded so nice with the DeVille was a poor choice with the SP10, sounding too crisp and sibilant. I cycled through a number of power amps to determine the best synergy. It became obvious that the SP10 is most definitely not Pollyannish about power amps. The Pass Labs Aleph 5, a most liquid-sounding solid-state contender, was a good choice, but in the end, it became clear that tube amps sounded best in this context, aided no doubt by the SP10's benign impedance magnitude: about 6.2 ohms minimum around 150Hz and 43 ohms maximum around 1.7kHz. Even the Will Vincent Dynaco ST-70 turned out to be an excellent coupling, as did the Curcio-modified Paoli 60M and Quicksilver V4 monoblocks. It was also important to use a tonally neutral front end, as any source glare or brilliance would only become multiplied downstream.

With tube amplification, the SP10 was capable of delivering sweet harmonic textures with consummate lucidity and transparency, along with a superlative boogie factor. There was plenty of low-level detail that bubbled to the surface effortlessly within the confines

of a nicely layered depth perspective. The SP10 could virtually light a fire under the soundstage, delivering dynamic peaks with no apparent compression. This made it easy to connect with the music's passion and drama.

It has been years since I was exposed routinely to a soft-dome tweeter, my daily diet these days being ribbons and electrostatics. The 28mm silk-dome tweeter used here features a wide-roll surround which, according to AJ, increases power handling and frequency bandwidth. It turned out to be a pleasant surprise; clearly, I need not have been worried about it being crossed over at 1.6kHz. AJ explained that although the electrical low- and high-pass crossover networks are configured roughly as third order, they do not resemble any classic third-order filter shape. The woofer "has a null in its response at some appropriate frequency, that both deals with a cone resonance and also produces a much higher rate of initial attenuation than a classic filter shape would produce." Since the crossover is in a frequency region where the auditory system is most sensitive, this had to be done just right. And to my ears the transition appeared to be seamless. Also surprising was the massive sweet spot generated by this tweeter. There seemed to be little difference in treble response between being seated or standing up—quite remarkable.

It was finally time to kick back and enjoy the music, as most recordings were enhanced in a good way by the SP10. To be clear, timbre accuracy was not impacted, as the midrange was spot on. Rather, it was a case of an added touch of air to the soundstage, an effect which, for example, was felicitous of female voice and violin overtones. After a few days of exposure, I realized that the SP10 had positively hacked my brain. It seemed that I was actually anticipating and craving its brand of tonal balance. So, be forewarned: It's very likely that exposure to the SP10 is habit forming.

One of the things I liked the most about the SP10 was its sense of coherence. It sounded very much like the single full-range-driver loudspeakers I had experienced and enjoyed in the past. To confess, I get a bit queasy at the sight of multiple drivers spaced out on a speaker's front baffle. There may be a spot in the far field where such a design integrates properly, but head movements typically expose a lack of coherence. That was not the case here. Space truly is the final frontier, and the SP10's spatial solidity won me over in spades.

The SP10 makes a major statement in the under-$10k speaker category and breathes new life into the concentric-loudspeaker genre. At its asking price it represents a major bargain and a mandatory audition for audiophiles and music lovers alike. Kudos to the MoFi team for gracing the audio scene with a superbly engineered and musically compelling loudspeaker. tas

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AudioQuest Mythical Creatures ThunderBird Zero Loudspeaker Cables and ThunderBird Interconnects

Rara Avis

Neil Gader

ThunderBird Zero is the entry level of the three models in AudioQuest's new Mythical Creature Series of cables that includes the FireBird and top-of-the-line Dragon. ThunderBird packs the same superb fit 'n' finish of its stablemates and much of AQ's sophisticated noise dissipation technology at a more affordable price. But entry level it most assuredly is not. To my mind it could very well be the sweet spot of AQ's top-rung speaker wire and interconnects.

ThunderBird Zero speaker cables use 10AWG high-purity Perfect Surface Copper+ (PSC+) conductors; the same metal is featured in the interconnects. The PSC+ conductors are made from solid copper, are directionally controlled, and are designed to minimize distortion caused by grain boundaries and to reduce RF. In AQ's view, opting for solid rather than stranded helps prevent a source of dynamic distortion. The ThunderBird interconnects use an air-tube dielectric of FEP (fluorinated ethylene propylene), *aka* Teflon, which achieves almost zero contact between the positive conductors and thus minimizes signal interference. The speaker-cable conductors are cold-welded to AudioQuest's pure red-copper spades or bananas. The bare-copper terminations are submerged in a vat of pure silver instead of the more common and less costly process of being tumbled in a lower-grade solution.

Uniquely, Mythical Creatures speaker cables can be used either as full-range cables (the Zero version) or in a bi-wire configuration with the addition of AQ's dedicated and optimized Bass cable. They also share certain traits with their more expensive siblings, including AQ's aggressive, "no characteristic impedance," Zero-Tech, Level 6 linear noise-dissipation, which includes a carbon and graphene resistive mesh-network, direction-controlled conductors, the 72v Dielectric-Bias System (DBS), and silver-plated drain wires. AudioQuest points out that the ThunderBird Zero's "insulation is also a dielectric that can act like a shunt-filter. Biasing minimizes dielectric-noise and linearizes the filter, significantly improving wide-bandwidth dissipation of induced RF noise," as well as minimizing its masking effects "across the widest bandwidth (range) of radio frequencies possible and …across the entire length of the cable." There's plenty of in-depth information available on the AudioQuest site, including a comprehensive white paper. I'm also going to commend readers to Issue 331 and Editor-in-Chief Robert Harley's review of the AudioQuest Dragon Zero Interconnect. RH's sidebar supplies key details about the technologies AQ employs.

I listened to ThunderBird interconnects and speaker cables on both an active (interconnect only) and passive loudspeaker system—of which two are based on per-

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Specs & Pricing

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sonally owned ATC loudspeakers. The active speakers are SCM50 tri-amplified towers; the passives are SCM20SL compacts, the latter being ATC's most recent offering with its latest in-house designed and built tweeter. Also weighing in was the new and formidable Cabasse Murano Alto three-way floorstander (review forthcoming). In passive mode, I ran the 80Wpc Roksan Attessa streaming integrated amp ($3199) with its in-house designed DAC. It turned out to be a real sleeper, incredibly satisfying as well as a great buy. Sources using ThunderBird interconnects included the Lumin S1 and dCS Bartók streaming DACs and as part of my analog front-end consisting of an EAT C-Dur turntable (review forthcoming) and a Pass Labs XP-17 phonostage, with the ThunderBird in the link between the phonostage and preamplifier. For the past few years, my reference cables have been Audience frontRow speaker, with Analysis Plus Micro Gold Oval interconnects performing the honors from my Pass Labs XP-12 preamp to the active ATC towers and a smattering of Wireworld's equally excellent Silver Eclipse thrown in the mix.

Turning to sonic performance my initial impression was one of rock-steady neutrality across the octaves, potent bass dynamics and pitch extension, and a rich midrange with spirited harmonic liveliness in the upper ranges. There was nothing flimsy or passive or laidback about this Bird's forthright tonal balance.

While it's generally accepted that tonal neutrality is a given in today's top-flight cables, that does not mean that cables necessarily lack a personality. Certainly, that is not the case with ThunderBird. A straight shooter across the octaves, it produced music with a tonal density and weightiness beyond almost every cable I've ever tested. Every individual note on piano, for instance, seemed to have audible gravity and impact. Even its upper mids and lower treble were fuller, more expansive and energetic, and more harmonically enriched. I think this is due to the absence of low-level noise and distortion, which open the door to the reproduction of subtle resonances and harmonic decay. As we all know, music and ambience don't just come to a dead stop. There are low-level effects from the instrument itself and, in the case of a live acoustic recording, the response of the venue. As I listened to wind and brass selections from Dave Wilson's *Winds of War and Peace*, ThunderBird Zero seemed to let me hear deeper and for greater duration into the sustain and decay of the music, particularly the rippling energy generated from the bass and kettle drums.

When approaching a cable review my habit is to listen first for its top-end character. The reason? That's where our hearing tends to be at its most sensitive, and if there are timing and phase distortions, colorations, and frequency non-linearities you're going to sense them. This is also the spectrum where sub-standard cables go to die. ThunderBird's top end was one of the most expressive and continuous I've yet experienced. As I listened to Stravinsky's *Pulcinella* [Argo]—an LP that gushes transparency—the characteristic that was most apparent was the lack of tension in the upper octaves, particularly in the strings and winds. There was an uncongested flow of air and harmonic energy that spelled pure naturalism. Mind you, I didn't say the treble was "sweet," which implies a constant "one-notey" character. By expressive, I mean that ThunderBird Zero had a wide-ranging ability to communicate contrast from, yes, the sweet to the acerbic, from the sharper edges to the more rounded ones.

As I listened to *The Wasps* Overture [Vaughn-Williams, LSO, Previn, RCA], it was instantly apparent that there was a minimum of congestion across the orchestral soundstage. The ThunderBird Zero seemed to widen contrasts and elucidate heretofore buried details. I noted an airier openness between images, including the low-level string transients and sustain of the concert harp. ThunderBird's openness and air acted almost like a balm over the upper mids. Section layering within the orchestra was very good, indeed, highlighted by three-dimensional width and depth and a distinct

ThunderBird Zero had a wide-ranging ability to communicate contrast from, yes, the sweet to the acerbic, from the sharper edges to the more rounded ones.

clarity from downstage strings to winds to brass to bass viols to the furthest upstage percussion cues.

Reflecting the resolution with which ThunderBird reproduced ambience and soundstage was the recent BMG LP release *Paco de Lucía: The Montreux Years*. These live performances were recorded from 1984 to 2012. The sonic differences in acoustics and recording technique, as the venues shifted over the years, was completely revealed. One venue seemed more open and spacious, while another hall at an earlier point in time seemed narrower, less lively, and more closed in.

Another area that receives the full benefit of ThunderBird's ministrations was instrumental textures. The tactile elements from smooth to coarse that help define a specific instrument—the fingernail tips on a guitar string versus the more aggressive clatter of a flatpick on a steel string, or the octave strings singing from a 12-string acoustic, or the air moving over a saxophone reed, or the spring and rebound of the drum skin of a tympani, even the skittering sound of sheet music turning—were clearly reproduced. During Melody Gardot's "Who Will Comfort Me," transients had the electric snap

that I've come to expect, quick but not edgy. ThunderBird's unbridled, wideband dynamics have the power to startle. For example, during the Manhattan Jazz Quintet's cover of "Autumn Leaves," nothing else makes me jump from my seat like the sudden blast from Lew Soloff's trumpet as it rockets into the recording space.

ThunderBird Zero also delineated small and larger collections of voices with ease. Individuation of singers was quite good, whether it was two- or three-part background harmony or a large chorale. In fact, on this subject of transparency and inner detail, years ago I recall listening with HP in his Sea Cliff home, most likely to the Infinity IRS V speakers. If I recall correctly, it was the *Weavers Reunion at Carnegie Hall*, and we both noted that during this live concert recording, the rise and fall of the audience's rousing response wasn't just a sweaty-palmed smear of applause; rather, the handclaps were crisp, particularized, and specific, adding to the dimension and scope of the appreciative crowd. It got to the point that you could nearly point out each pair of hands in a specific row. If everything else in your rig is up to snuff, ThunderBird Zero brings forth this level of resolution and transparency.

More difficult to explain was what I didn't see coming—a response to familiar music that bordered on the emotional. This was based on my hearing more of the musical performance than before, while simultaneously hearing less and less of my actual loudspeaker and system. Some cables, lesser ones, tended to squeeze a little of the life and expression from wide-range speakers like the ATCs, perhaps suppressing micro-dynamic energy or clouding or rolling the top ever so slightly, sucking some of the airiness from the treble. But ThunderBird seemed to saturate the stage with greater musical color, from darker resonances to brighter, sunlit harmonics. My enthusiasm for listening to music was raised to new heights.

ThunderBird joins a very small cadre of cables with exemplary transparency and superb musicality.

As I've written countless times in cable reviews, cables don't fix systems gone awry. Ideally, they are fine-polishing tools, detailing and bringing out the luster of a system. They provide a transparent window that exposes the pristine surface beneath. The reason we love great cables is because they draw an audio rig ever closer to the dream of realizing the live musical experience in the home. To that end, ThunderBird Zero joins a very small cadre of cables that, in my opinion, demonstrate exemplary transparent sonic behavior and convey superb musicality all along the system chain. Without question, this is one high-flying bird. tas

United Home Audio Ultima5 Tape Deck

Mini-Me

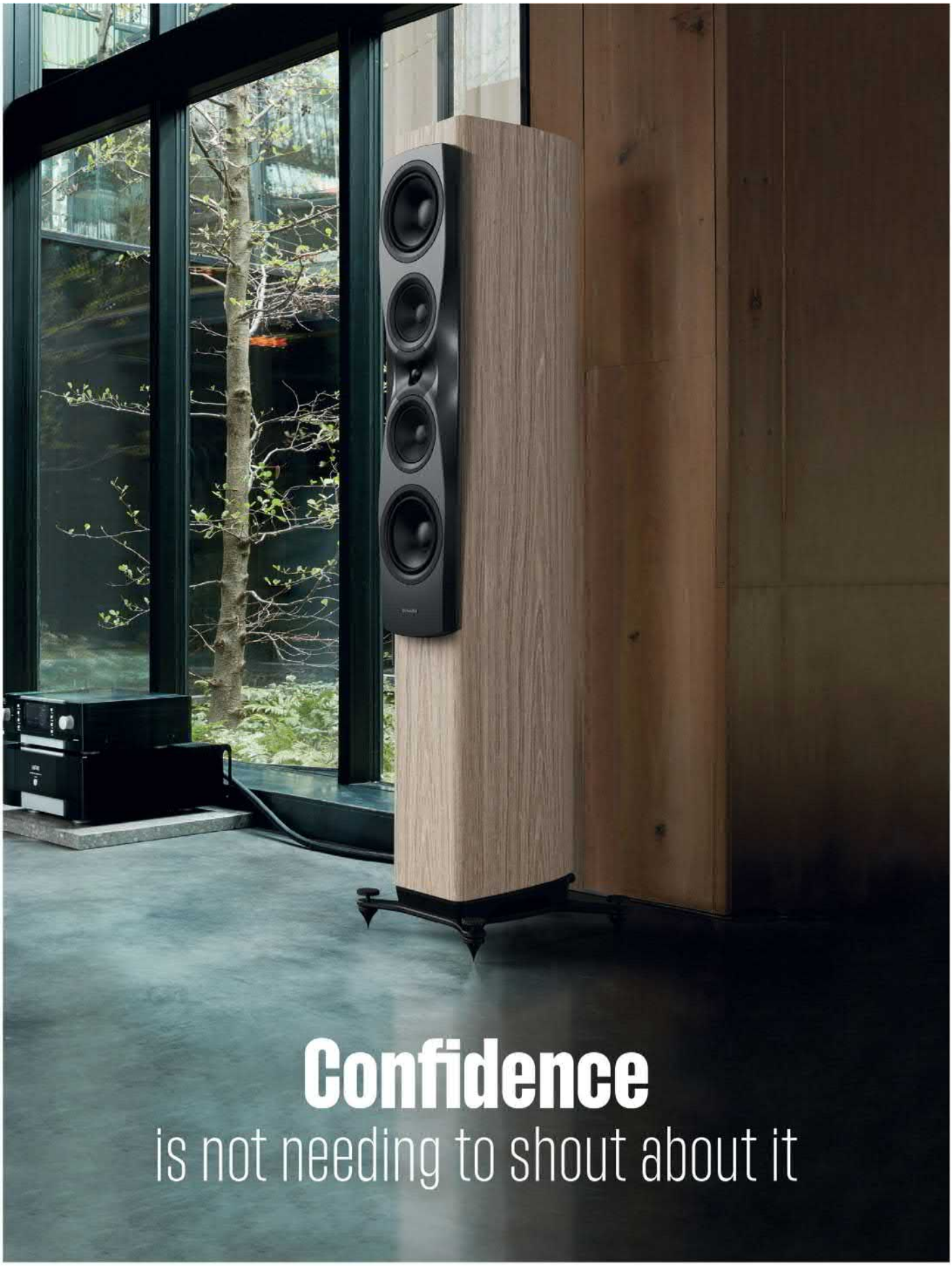
Jonathan Valin

A bit less than two years ago, Greg Beron came out with a statement tape machine, the United Home Audio SuperDeck, which I reviewed in the September 2021 issue of TAS. At the time, it was the most realistic playback device I'd heard. Loaded with bespoke parts (including ultra-expensive, custom-made resistors, capacitors, and gold-plated copper circuit boards) and equipped with a separate outboard EQ box (a first for Greg), separate power supply, and an optional, gel-damped, billet-aluminum stand to lower vibration to a minim, it was a front-end masterpiece. At $90k for the playback-only unit ($106k for the record/playback version), it was also very expensive and with three chassis (not counting the stand) fairly sizable, to boot.

Comes now the latest version of Greg's "standard" machine—the single-chassis, 15ips, playback-only Ultima Series tape deck, iterations of which Beron has been perfecting for over a decade. Like the Ultima4 that preceded it (and like the SuperDeck, for that matter), the $34,500 Ultima5 (add another $6500 for the outboard OPS-DC power supply) starts life as a Tascam BR-20. By the time you buy it, however, the entire deck has been refurbished—all electronic parts, connectors, tape heads, and transport mechanisms rebuilt or replaced, all playback circuits updated, EQ precisely dialed in to the IEC standard, and the chassis itself refashioned in sturdy, mu-metal-shielded billet-aluminum. (In my SuperDeck review, Greg explained why he chose the Tascam as his base model: First, it is a recent design from the mid-to-late 1990s, for which replacement parts are still available directly from Tascam; second, because of parts availability, it is a safer bet to warranty for two years—as every one of Greg's decks are—than a rebuilt 50-to-60-year-old studio machine from Ampex or Studer; third, it has all DC motors, which are more reliable and speed-stable than the very large AC motors in studio decks, and a very efficient tape transport with full-logic control; and fourth, it is compact compared to giant studio machines, fits on the average audiophile rack, and looks like a part of the system rather than a huge outlier.)

The Ultima5 sounds uncannily like a Mini-Me version of the SuperDeck.

Sonically, the big difference between the Ultima5 and the Ultima4 (and other earlier Ultimas) is really a matter of timing. Greg hadn't designed and built the SuperDeck when he came out with the Ultima4, so it could not benefit from technology "trickled down" from that superb unit. The Ultima5 could—and did. Indeed, to my ears, the Ultima5 sounds uncannily like a Mini-Me version of the



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Price: $34,500 ($6500 for optional, outboard OPS-DC power supply)

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Linestage preamps: Soulution 725, MBL 6010 D, Siltech SAGA System C1, Air Tight ATE-2001 Reference
Phonostage preamps: Soulution 755, Constellation Audio Perseus, DS Audio Grand Master
Power amplifiers: Soulution 711, MBL 9008 A, Aavik P-580, Air Tight 3211, Air Tight ATM-2001, Zanden Audio Systems Model 9600, Siltech SAGA System V1/P1, Odyssey Audio Stratos, Voxativ Integrated 805
Analog source: Clearaudio Master Innovation, Acoustic Signature Invictus Jr./T-9000, Walker Audio Proscenium Black Diamond Mk V, TW Acustic Black Knight/TW Raven 10.5, AMG Viella 12
Tape deck: Metaxas & Sins Tourbillon T-RX, United Home Audio Ultimata5 OPS-DC
Phono cartridges: DS Audio Grandmaster, DS Audio Master1, DS Audio DS-003 Clearaudio Goldfinger Statement II, Air Tight Opus 1, Ortofon MC Anna, Ortofon MC A90
Digital source: MSB Reference DAC, Soulution 760, Berkeley Alpha DAC 2
Cable and interconnect: Crystal Cable Art Series Da Vinci, Crystal Cable Ultimate Dream, Synergistic Research SRX, Ansuz Acoustics Diamond
Power cords: CrystalConnect Art Series Da Vinci, Crystal Cable Ultimate Dream, Synergistic Research SRX, Ansuz Acoustics Diamond
Power conditioner: AudioQuest Niagara 5000 (two), Synergistic Research Galileo UEF, Ansuz Acoustics DTC, Technical Brain
Support systems: Critical Mass Systems MAXXUM and QXK equipment racks and amp stands and Center-Stage^{2M} footers
Room treatments: Stein Music H2 Harmonizer system, Synergistic Research UEF Acoustic Panels/Atmosphere XL4/UEF Acoustic Dot system, Synergistic Research ART system, Shakti Hallographs (6), Zanden Acoustic panels, A/V Room Services Metu acoustic panels and traps, ASC Tube Traps
Accessories: DS Audio ES 001 LP-centering device, DS Audio ION 001 LP ionizer, SteinMusic Pi Carbon Signature record mat, Symposium Isis and Ultra equipment platforms, Symposium Rollerblocks and Fat Padz, Walker Prologue Reference equipment and amp stands, Walker Valid Points and Resonance Control discs, Clearaudio Double Matrix Professional Sonic record cleaner, Synergistic Research RED Quantum fuses, HiFi-Tuning silver/gold fuses

SuperDeck—which is to say, it is a greater improvement over the Ultima4 than the Ultima4 was over the Ultima3. Though it doesn't look much different than an Ultima4, various technologies from the SuperDeck—such as a new gain-stage configuration, new caps in critical positions, new wiring, a newer and much better grounding system, and new and improved power delivery with more amperage—have found their ways into the Ultima5's circuitry. As was the case with the SuperDeck, the result is a more sonically "complete" presentation from top to bottom.

To hear the improvements its SuperDeck heritage make, all you have to do is put on a familiar recording, say Diana Krall's terrific cover of Joni Mitchell's "A Case of You" from *Live in Paris* [Verve/Puget Sound Studios]. On LP or CD, *Live in Paris* is, indeed, a very live-sounding set. In Paris' 2000-seat Olympia Hall, Krall's contralto and Steinway piano have the slightly bright, clear, dry sound of closely miked vocalists and pianists performing well out on a large stage, a good distance from surrounding walls. There is little in the way of ambient reflection (just a bit of natural reverb) or enrichment of tone. Krall and her instrument are simply there without much color, as if intensely spot lit.

Sonically, the result of this naked exposure is an emphasis on starting transients, with the subsequent development of timbre and decay a bit curtailed. (Do remember that, typically, as much as 70% of the sound of acoustic instruments in a concert venue is reflected from the walls, floor, and ceiling of the hall itself; without the full measure of such acoustic support, instruments tend to sound a bit anechoic, which is, to a degree, the case here.)

Live in Paris is a good slice of vinyl, but the 15ips tape—as is almost always the case with 15ips R2R tape—is substantially better. Oh, starting transients are still emphatic, but timbre and decay are more fully developed. Instead of being dry, lean, and exposed, voice and piano are richer and more natural in tone and fuller in body. You hear, for instance, the harmonic development of the chords sounded on the piano strings and not just the attack of the strings themselves, making the Steinway sound more like a Steinway than a hand-cranked music box. Krall's voice and conversational style are more fully reproduced, too, with a larger taste of the hoarse, smoky, Julie London-like

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chest tone that helps makes her delivery so droll, sexy, and self-aware.

I picked this spare cut (just voice and piano) because it clearly illustrates what a great tape player like the Ultima5 (and a good tape) can do that other media can't or can't to the same extent. The basic sonic signature of the recording isn't changed on R2R—Krall and her piano still sound spotlit, as they should—but crucial information is added. The pitch, timbre, intensity, and especially duration of the notes being played and sung are "filled in," the way the dots of a halftone repro are "filled in" in a continuous-tone photograph of the same subject. Artistry, expressiveness, and lifelike presence are "filled in." This is the very essence of "completeness." And through the Ultima5 you will hear it on every good tape—from something as simply arranged as "A Case of You" to a piece as complexly scored as Bartók's *Concerto for Orchestra*.

As I said in my review of the SuperDeck, there were and are many reasons for R2R tape's sonic superiority. For one thing, a tape is duplicated directly from the mastertape or a copy of a mastertape via two synchronized recorders. The process is relatively simple and straightforward. As most of you know, making a vinyl record is a far more lossy procedure, typically involving several generations of metal "fathers and mothers," stampers, and vinyl pucks that must be engraved and flattened under heat and pressure.

For another, outside of their transport mechanisms tapes recorders have no moving parts. Where a phono cartridge's stylus wiggles up and down and side to side as it traces the modulations engraved in an LP's grooves, sending those physical vibrations to magnets or coils (which also move) at the other end of a cantilever, the "heads" on RTR decks are fixed and stationary. They simply scan the magnetic signals pre-recorded on the tapes passing beneath them, converting them into electrical signals (then eq'ing and amplifying them via their built-in head amps) without having to compensate for the mass, inertia, and relative imprecision of moving parts.

For a third, tapes (or at least 15ips tapes) are inherently higher in fidelity than LPs. Not only are they much closer to the source, the greater width of their tracks (vis-à-vis a record's grooves) also means more information is laid down and preserved in each channel, while the higher speed at which those tracks are scanned makes for smoother, more extended frequency response (particularly in the bass), a more naturally "continuous" (less step-like, more ramp-like) presentation of dynamic gradients, and (with tape's richer and fuller bottom octaves and slight compression of the top treble) a distortion profile that is closer to that of the human ear—a warmth and sweetness that are very natural and musical.

Though current analog technology (particularly DS Audio's near-massless Grand Master optical cartridge and ES-001 centering device) has brought LP playback considerably closer to the sound of tape, there is still a gap, which the Ultima5 consistently reveals and exploits. Of course, much depends on the quality of the tape transfer. But, at their best (or even short of their best), 15ips reel-to-reel tapes can be astonishingly realistic sounding, provided that the tape deck is also first rate.

The United Home Audio Ultima5 with OPS-DC power supply is precisely that—first rate. Neutral in balance with better reach and dynamic impact in the bottom octaves, a wider, deeper soundstage, tighter imaging, higher resolution, and fuller, more accurate, natural, and continuous reproduction of the dynamic/harmonic envelope than previous Ultimas, it is only exceeded by the much more expensive SuperDeck. Even at that, the difference isn't enormous. Plus, the build-quality of all Greg's players is impeccable. Unlike refurbished Ampexes and Studers, you won't run into trouble down the road with a United Home Audio machine.

To sum up, if you're in the market for a great, full-sized, playback-only, 15ips tape deck (and don't want to bet the farm on a no-holds-barred UHA SuperDeck), the Ultima5 OPS-DC would, unquestionably, be the unit I recommend. tas

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TAS 2023 Super Tape List

Great-Sounding Reel-to-Reel Tapes

Jonathan Valin (with a little help from his friends)

Those of you who've been following me in TAS already know that I'm a huge fan of reel-to-reel tapes and tape players. I reviewed two of the latter last year (the SuperDeck from United Home Audio and the Tourbillon from Metaxas & Sins) and, in addition to the Ultima5 in this issue, hope to write about one or two others later this year. But tape decks are no good unless you can get first-rate tapes to play back on them. So, in keeping with the tradition of our annual Super LP List, I've compiled a selection of recommended tapes, which you'll find below.

Of course, I haven't been able to listen to all the many 15ips reel-to-reel issues and reissues that have been marketed over the past few years. Though I've made my selections from a fairly large sampling (and have had some help from tape aficionados Greg Beron, Andre Jennnings, and others), my initial list of best-sounding tapes is nowhere close to being comprehensive. There are many worthy tapes out there that I simply haven't heard.

Also, be aware that the sonic quality of R2R tapes, like the sonic quality of LPs, varies with the generation of the source (in addition to the quality of the original mixing and mastering). Those very well-recorded ones that are copied from second- and third-generation production masters (copies of the mastertape used to press vinyl records) tend to sound a bit less good than those that are copied directly from first-generation mastertapes. To give you a heads up, I've marked the tapes that are said to have been copied directly from the original 15ips or 30ips mastertape with double asterisks, though understand that, however it was duplicated, no tape on this list is a bust.

You should know, as well, that the tapes sourced from Puget Sound Studios (marked with a single asterisk) are only available to industry professionals. In other words, you would have to find someone in the business to purchase them for you. Given the quantity, quality, and affordability of Puget Sound Studios' list of titles, this is something you may want to look into, as Bruce Brown, who runs Puget Sound, offers many rock, jazz, and pop audiophile favorites on 15ips R2R at reasonable (for tape) prices.

Classical

- Albeniz: *Suite Española* (De Burgos, New Philharmonic), Decca/The Tape Project (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450
- Arnold: *Arnold Overtures* (Arnold, London Philharmonic), Reference Recordings/The Tape Project (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450
- Bach: *Cello Suite No.3*, etc. (Frédéric Rosselet), Yarlung Records (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $290**
- Bartók: *Concerto for Orchestra* (Reiner, CSO), RCA Victor/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Beethoven: *Sonatas Nos.8 and 14* (Lenehan), Chasing The Dragon (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $499.99**
- Beethoven: *Sonata Op.96* (Abel/ Steinberg), Wilson Audiophile/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Elgar: *Cello Concerto* (Du Pré, Barbirolli, LSO), EMI/Horch House Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), 449.99 EUR
- Graham: *Winds of War and Peace* (National Symphonic Winds), Wilson Audiophile/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Petteri Iivonen: *The Art of the Violin Volume 1* (Debussy Sonata in G Minor, etc.), Yarlung Records (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $449.99**
- Liszt, Enesco, et al.: *Rhapsodies* (Stokowski), RCA/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Mendelssohn: *Octet* (Locrian Ensemble), Chasing The Dragon (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $499.99**
- Mussorgsky: *The Power of the Orchestra* (Leibowitz, Royal Philharmonic), RCA Victor/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Nojima: *Nojima Plays Liszt*, Reference Recordings/The Tape Project (15ips,

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¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450

- *Open Reel Selection of Opus 3 Analogue Classical Recordings* (Brahms, Albeniz, Sandstrom), Opus 3 (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $299.99**
- Penderecki, et al.: *Debut* (Janaki String Trio), Yarlung Records (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $290**
- Prokofiev: *Lieutenant Kije* (Reiner, CSO) RCA Victor/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Prokofiev: *Piano Concerto No.3* (Janis, Kondrashin, Moscow Philharmonic), Mercury/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Rachmaninoff: *Symphonic Dances & Vocalise* (Johanos, Dallas Symphony), Turnabout/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Ravel: *Daphnis and Chloe* (Munch, BSO), RCA Victor/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Respighi: *Pines of Rome* (Reiner, CSO), RCA Victor/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Saint-Saëns: *Symphony No.3* (Munch, BSO), RCA Victor/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Various: *The Reiner Sound* (Reiner, CSO), RCA Victor/Horch House Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), 449.99 EUR
- Various: *Witches' Brew* (Gibson, New Symphony Orchestra of London), RCA Victor/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $449.99**
- Vivaldi: *Vivaldi in Venice* (Interpreti Veneziani), Chasing The Dragon (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $799.99**

Rock, Blues, Pop, Folk

- Joan Baez: *Joan Baez*, Vanguard Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Joan Baez: *Joan Baez, Vol. 2*, Vanguard Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- The Band: *The Band*, Capitol/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- The Band: *Stage Fright*, Capitol/The Tape Project (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450
- Patricia Barber: *Café Blue*, Premonition Records (15ips, ¼", 2-track stereo, 10.5" NAB reel, digital recording, IEC EQ), $599.99
- Beatles: *Sgt. Pepper's Lonely Hearts Club Band*, Parlophone/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Harry Belafonte: *Belafonte at Carnegie Hall*, RCA Victor/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- David Bowie: *The Rise and Fall of Ziggy Stardust and the Spiders from Mars*, RCA/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- The Doors: *L.A. Woman*, Elektra/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- *Emerson, Lake & Palmer*, Island/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Vanessa Fernandez: *Use Me*, Groove Note (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $599.99**
- Vanessa Fernandez: *When the Levee Breaks*, Groove Note (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $599.99**
- Janis Ian: *Breaking Silence*, Columbia/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- Jacintha: *Autumn Leaves/The Songs of Johnny Mercer*, Groove Note (15ips, ¼", 2-track stereo, 10.5" NAB reel, NAB), $599.99**
- Jacintha: *Jacintha is her name*, Groove Note (15ips, ¼", 2-track stereo, 10.5" NAB reel, NAB), $599.99**
- Jacintha: *Lush Life*, Groove Note (15ips, ¼", 2-track stereo, 10.5" NAB reel, NAB), $599.99**

- Rickie Lee Jones: *It's Like This*, Artemis/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- *Antonio Lysy at the Broad: Music from Argentina*, Yarlung Records (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $290**
- Dean Martin: *Dream with Dean—The Intimate Dean Martin*, Reprise Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Hugh Masekela: *Hope*, Troika/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450.00**
- Metallica: *The Black Album*, Elektra/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Joni Mitchell: *Blue*, Reprise Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Joni Mitchell: *Hejira*, Reprise Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200.00/reel*
- Peter, Paul and Mary: *In the Wind*, Warner Bros. Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Lou Reed: *Rock N Roll Animal*, RCA Victor/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Rolling Stones: *Beggars Banquet*, London Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*

Atsushi Miura, the founder of "A & M", had a desire to design and build an amplifier using 300B vacuum tubes since he launched the AirTight brand in 1986.
At that time, Western Electric had recently discontinued production of 300B tubes, making it unrealistic for a small start-up manufacturer to make a single-ended 8 Watt amplifier using tubes which were no longer in production.
However, in the late 90's that situation changed. Western Electric contacted Miura to ask for AirTight to support marketing and promotion of their new 300B tubes in Japan. Miura immediately accepted this request, and thus began his journey to build the 300B amplifier he had conceived in 1986. In 1999, AirTight's first 300B single-ended amplifier, the "ATM-300" was announced. Its sophisticated styling, along with clean and tight sound, overturned the preconceptions that many audiophiles had toward single-ended triode designs. The ATM-300 has been a best-selling amplifier for more than 20 years, becoming a symbol for the AirTight brand. To celebrate the 30th anniversary of the A&M company, Miura found it fitting to celebrate by releasing the "ATM-300 Anniversary" model, equipped with new TA-300B tubes made by Takatsuki Electric.

This limited edition 100-unit anniversary model raised the bar of performance even further and sold out within its first year. Miura received so much enthusiastic feedback from the ATM-300 Anniversary model, that he felt led to design the ultimate 300B single-ended triode amplifier.
In 2018, the AirTight ATM-300R was released as an unparalleled reference model which pursues sophisticated simplicity in order to bring out all the charm of the 300B tube. This ATM-300R is the ultimate realization of Miura's dream from 1986 combined with everything learned over a journey of more than 30 years...

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- Rolling Stones: *Let It Bleed*, London Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Hans Theessink: *Baby Wants To Boogie*, Blue Groove/Horch House Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), 449.99 EUR
- Muddy Waters: *Folk Singer*, Chess Records/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- The Weavers: *Reunion at Carnegie Hall 1963*, Vanguard/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Junior Wells: *Hoodoo Man Blues*, Delmark/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $475**
- Sonny Boy Williamson: *Keep It To Ourselves*, Storyville/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**

Jazz

- Dee Alexander: *Magic*, International Phonograph Inc. (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $150/reel**
- Louis Armstrong: *Satchmo Plays King Oliver*, Audio Fidelity/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Chet Baker: *Chet Baker Sings*, Pacific Jazz/Puget Sound Studios (15ips, ¼", 2-track mono, 10.5" NAB reel, IEC EQ), $200/reel*
- Count Basie: *88 Basie Street*, Pablo Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Clifford Brown: *Memorial Album*, The Tape Project (15ips, ¼", 2-track mono, 10.5" NAB reel, IEC EQ), $450
- Holly Cole Trio: *Don't Smoke in Bed*, Manhattan Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- *International Phonograph Inc. Jazz Sampler 1,* International Phonograph Inc. (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $150/reel**
- *International Phonograph Inc. Jazz Sampler 2,* International Phonograph Inc. (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $150/reel**

- Quentin Collins All-Star Quintet: *A Day in the Life*, Chasing The Dragon (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $499.99**
- John Coltrane: *A Love Supreme*, Impulse Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- John Coltrane Quartet: *Ballads*, Impulse/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $500**
- Miles Davis: *Birth of the Cool*, Capitol Records/Puget Sound Studios (15ips, ¼", 2-track mono, 10.5" NAB reel, IEC EQ), $200/reel*
- Miles Davis: *Kind of Blue*, Columbia Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Duke Ellington: *Masterpieces by Ellington*, Columbia/Puget Sound Studios (15ips, ¼", 2-track mono, 10.5" NAB reel, IEC EQ), $200/reel*
- Bill Evans Trio: *Waltz for Debby*, Riverside/The Tape Project (15ips, ¼", 2-track stereo, 10.5" NAB reel, Album, IEC EQ), $450
- Ella Fitzgerald and Louis Armstrong: *Ella and Louis*, Verve Records/Puget Sound Studios (15ips, ¼", 2-track mono, 10.5" NAB reel, IEC EQ), $200/reel*
- Diana Krall: *Live in Paris*, Verve Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, Album, IEC EQ), $200/reel*
- Josh Lawrence: *Jazz Masters Volume 1*, Dangerous Analog, LLC (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $499.99**
- Syd Lawrence Orchestra: *Big Band Spectacular*, Chasing The Dragon (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $499.99**
- Thelonious Monk: *Brilliant Corners*, The Tape Project (15ips, ¼", 2-track mono, 10.5" NAB reel, IEC EQ), $450
- Lee Morgan: *The Sidewinder*, Blue Note/The Tape Project (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450
- Gerry Mulligan: *Gerry Mulligan Meets Ben Webster*, Verve/United Home Audio (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ)**
- Oliver Nelson: *The Blues And The Abstract Truth*, Impulse/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450**
- *Joe Policastro Trio Featuring Mark Feldman,* International Phonograph Inc. (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $150/reel**
- Sonny Rollins: *Saxophone Colossus*, Prestige/The Tape Project (15ips, ¼", 2-track mono, 10.5" NAB reel, Album, IEC EQ), $450
- Frank Sinatra: *Sinatra at the Sands*, Reprise Records/Puget Sound Studios (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $200/reel*
- Jimmy Smith: *The Sermon!* Blue Note/The Tape Project (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $450
- Clare Teal with the Syd Lawrence Orchestra: *A Tribute to Ella Fitzgerald,* Chasing The Dragon (15ips, ¼", 2-track stereo, 10.5" NAB reel, IEC EQ), $499.99**
- Ben Webster: *Gentle Ben*, Ensayo/Analogue Productions (15ips, ¼", 2-track stereo, 10.5" NAB reel, Album, IEC EQ), $450**
- The Anthony Wilson Trio: *Our Gang*, Groove Note (15ips, ¼", 2-track stereo, 10.5" NAB reel, NAB), $599.99**

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Head *and* Heart

Rockport Technologies **Orion Loudspeaker**

By Robert Harley

Photos by Matt Wrightsteel

It's possible to admire a loudspeaker's performance without falling in love with the speaker. Such speakers appear to do all the things we ostensibly want speakers to do—exhibit no major tonal colorations, deliver high resolution, go low in the bass, and express wide dynamic contrasts—but for some reason don't push our musical buttons. It's a paradox; those qualities and myriad other specific performance parameters, in aggregate, are theoretically what makes a speaker musically involving. But that's not always the case in practice. Such speakers engage the head but not the heart.

Conversely, some speakers have an elusive quality that communicates musical expression despite exhibiting obvious sonic shortcomings. The Spica TC-50 from the 1980s and 1990s comes to mind; this inexpensive speaker was clearly colored tonally, limited in bass extension, and restricted dynamically, yet was a pleasure to listen to. Whether by design or happy accident, the TC-50's many flaws were easy to overlook, and its scant few virtues were made musically manifest.

But there's a third category—the speaker that checks all the audiophile boxes and engages you musically in a powerful and profound way. You can listen to such a speaker critically, marveling at the smoothness of the response, the wide dynamic contrasts, three-dimensional soundstaging, and superb bass resolution. Yet it's nearly impossible to maintain that analytical frame of mind in the face of just how rewarding it is let yourself abandon critical listening and be drawn into the musical expression.

The all-new Orion from Rockport Technologies is such a speaker. It is astonishing sonically in so many ways, yet more importantly, never fails to convey a captivating sense of music-making that renders its sonic performance secondary.

OVERVIEW

The $133,000 Orion is an entirely new loudspeaker, designed from the ground up as Rockport's penultimate model. It slots just below the flagship Lyra ($190,000; see my review in Issue 268) and just above the Cygnus ($70,000) with the Avior II ($47,000) and Atria II ($38,000) serving as the entry points in the Rockport line.

As I've written about Rockport Technologies in *The Absolute Sound's Illustrated History of High-End Audio, Volume One: Loudspeakers*, and in last December's High-End Hall of Fame induction of Rockport founder Andrew Payor, the company is more of an artisanal craftshop than a loudspeaker factory. That's by design; Payor refuses to compromise his exacting

standards or forego his hands-on involvement to increase production. Since its founding in 1985, Rockport has invented sophisticated and novel technologies that have advanced loudspeaker design and performance. It's not by accident that many high-end electronics and source-component manufacturers display their products at audio shows with Rockport loudspeakers.

The Orion is remarkably compact, standing just 50" tall but weighing a hefty 360 pounds each out of the crate. Handling the speaker gives you a sense of its sheer density. The design brief was to create the purest expression of a full-range three-way loudspeaker. One of Payor's many goals for Orion was to design a relatively modestly sized speaker that played larger than its dimensions would suggest. The drivers, designed from scratch for Orion as part of the three-year development project, comprise a 13" woofer, 7" midrange, and 1.2" dome tweeter mounted in a waveguide. The cabinet is a variation on the molded-composite enclosure technology Rockport developed in 1993 for the Procyon model and refined over the years. Rather than build cabinets from flat sheet-stock and glue the pieces together, Rockport creates an outer, molded composite shell of the cabinet shape from carbon fiber or fiberglass. A second, smaller inner shell is formed, leaving a void between them. The cavity between the two composite shells is filled with a dense, highly damped, viscoelastic core material that bonds the inner and outer shells together, creating an enclosure that is at once dense, stiff, inert, and well-damped. Moreover, this technique allows the cabinet to have the ideal shape for optimizing the wave launch from the drivers as well as reducing diffraction.

It is astonishing sonically in so many ways, yet more importantly, never fails to convey a captivating sense of music-making that renders its sonic performance secondary.

This enclosure technology reached its ultimate realization in the flagship Lyra, whose dual enclosure forms are made from cast aluminum. In my review of the Lyra, I noted how the lack of enclosure sound contributed to the speaker's incredibly low noise floor and concomitant resolution of extremely fine detail. To bring the benefits of that cabinet construction to a lower price, Payor developed a new implementation for Orion in which the inner enclosure is made from cast aluminum, with the outer shell molded from carbon fiber. The outer carbon-fiber shell is much less labor intensive to finish than aluminum, bringing down the cost while maintaining the advantages of the technique.

The Orion's enclosure is made from just three pieces; the inner cast aluminum shell, the outer carbon-fiber shell, and the carbon-fiber front baffle. The Orion's swept-back baffle, with its very large diffraction-reducing radiuses, is unmistakably Rockport. You can see a detailed animated video of the Orion's cabinet construction, narrated by Andrew Payor, on Rockport's website.

A rear-firing port terminates just above the input terminals on the enclosure's narrow rear section. Two pairs of binding posts are provided for bi-wiring. Because the woofer and midrange crossover circuits are separate, the Orion can be passively bi-amplified. That is, one amplifier drives the woofer input and a second amp drives the midrange-tweeter section. Both amplifiers are run full range, with the frequency division between drivers realized by the Orion's internal crossover.

An aluminum outrigger structure on the enclosure bottom increases the speaker's stability. Four large spikes thread through the outrigger's corners and are capped with locking knobs on top for a clean look. The standard finish is a metallic black, with custom colors available at extra charge upon request.

I go into more technical detail on the Orion's drivers, crossover, and enclosure in the sidebar.

PASS

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LISTENING

The Orion was set up in my listening room by Josh Clark, who bought Rockport Technologies in 2019 with the idea of carrying on the company's legacy. Founder Andrew Payor continues in his design role, with Josh handling the business and marketing side of the company. You can see a video of Josh in my listening room giving an overview of Orion at our YouTube channel (youtube.com/@TheTASmagazine).

We decided to passively bi-amplify the Orion with the CH Precision M10 amplifiers. The M10's remarkable configuration flexibility again proved its worth; the amplifier can be run as a 300W monoblock, in bridged mono mode for 1100W, as a 300Wpc stereo amplifier, or as a two-channel amplifier with passive or active bi-amping (the latter requires an optional input card). Most of my listening was via passive bi-amplification, although I did power the Orion with a single stereo amplifier because this is how most listeners will drive the speaker.

My first few hours with the Orion weren't spent in the sweet spot exploring the speaker's sonic characteristics, but rather simply enjoying music with a friend while sitting just to the side of the center seat. In this environment I was struck by the Orion's remarkably lifelike quality and the way in which it disappeared—in every sense of that word—as an intermediary between the music and me. The Orion conveyed a powerful feeling of contemporaneous music-making, not just "good sound." There was just a natural and unforced sense of ease as well.

Later, in the hot seat, listening critically, I was immediately aware that the Orion is a speaker that not only sounds wonderful in an analytical audiophile sense, but more importantly, communicates the music in a way that fosters a deep connection with the musicians' performances and artistry. The sound was vibrant, alive, and incisive—qualities that imbued the music with a lifelike immediacy. This was the Orion's most salient quality, along with a sense of precision and resolution.

In fact, the word "precision" best describes the Orion. The speaker projects a sense of clarity, resolution, alacrity, and vibrant immediacy. Everything is tidy, with no rough edges. Yet this description of "vibrant immediacy" could apply to other speakers that don't engage the listener musically the way that Orion does. The difference is that although the Orion has a pristine clarity and very high resolution of detail, it doesn't sound forward, aggressive, or analytical. Rather, the Orion sounds utterly liquid and warm in timbre, with no hint of etch or metallic hardness. That is probably attributable to the speaker's very low distortion. This combination of an incisive and richly detailed sound coupled with very low distortion and lack of glare made for a thrilling listening experience. The speaker projects a full measure of upper midrange and treble energy yet doesn't sound bright or fatiguing. The Orion's combination of high resolution—in timbre, fine detail, and dynamics—with a sense of ease is its defining achievement.

But there's something else that's very special about the Orion, a quality that took me some time to put my finger on. I have mentioned the Orion's upbeat and lifelike presentation that conveys a sense of contemporaneous music-making. In this regard, the Orion is absolutely stunning; even now as I listen to background music far away from the sweet spot while writing this review, the Orion's "aliveness" shines through. I have come to believe that this character can be attributed, in large part, to the speaker's transient performance. Transients reproduced by the Orion are ultra-fast in attack and decay, just as one hears in live

The Orion communicates the music in a way that fosters a deep connection with the musicians' performances and artistry.

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music. It sounds as though all the energy in the transient is delivered to the listener at the same instant, with equally fast decay. By contrast, many other speakers sound as though that energy is spread out in time slightly, muting the dynamic impact. In many other speakers, the stored energy in the drive units and enclosure is released after the transient is over, robbing the music of that lifelike snap and immediacy as well as introducing a thickness and loss of clarity.

I heard the Orion's whip-fast transient reproduction most obviously on the drum kit; the pop of the snare drum had a suddenness of attack and instantaneous decay that one hears in life. The musical effect was an increased awareness of music's rhythmic flow, of dynamic inflections, and the drummer's interaction with soloists. In many types of music, the drummer will often emphasize the rhythm's backbeat to take the energy up a notch by playing cross-stick beats on the snare. Here are two good examples: midway through Joe Pass' solo on "Contractor Blues" from the great Count Basie LP *88 Basie Street*, the drummer goes for the cross stick just as Pass and the band really dig into the swinging groove. The second example is "I Love Being Here With You" from Diana Krall's *Live in Paris* during the latter half of the guitar solo. The Orion's stunning transient performance reproduced these cross-stick beats with such clarity and impact that they had the intended—and thrilling—effect of heightening the energy and adding emphasis to the rhythm. That's what I meant earlier by describing the Orion as a speaker that makes the music come alive. It's not just reproducing sound; it's conveying the expressions of the musicians.

That's just one small example that serves for many, many more; drums in general had a lifelike sound that was consistently exhilarating. This was true whether listening at a loud level in the sweet spot or as background from another room, so powerful was this aspect of the Orion's performance. Listen to a drummer like the great Roy Haynes (he played with Charlie Parker and Lester Young and is still going today at age 97), whose nickname was "Snap Crackle" for his unique style of punctuating the rhythm with strong snare beats. You can hear Haynes in top form on the Chick Corea composition "Windows" from *Like Minds* with Chick Corea, Gary Burton, Pat Metheny, and Dave Holland. Haynes' insistent drive seems to propel these great soloists to new heights. The thrilling performances on this album were simply more thrilling through the Orion because of this heightened sense of musical interplay. These are the kind of musical rewards the Orion routinely delivers with such ease and aplomb.

Some other speakers are also "fast," yet don't sound quite like Orion.

Some other speakers are also "fast," yet don't sound quite like Orion. In addition to not reproducing transients as coherently, they don't reproduce the decays as quickly or as deeply as Orion. The cliché of the "silence between notes" has turned out to be a surprisingly important aspect of musical realism, and one that the Orion absolutely nails. Much of the Orion's extraordinary dynamic performance can be attributed to the advanced driver technology along with the dead-quiet enclosure and lack of energy storage in the speaker. This lack of energy storage and concomitant deep silence also increases the perceived transient snap by widening the contrast between silence and musical peaks.

Specs & Pricing

Three-way floorstanding loudspeaker
Driver complement: 13" woofer, 7" midrange, 1.25" dome tweeter
Frequency response: 20Hz–25kHz (–3dB)
Impedance: 4 ohms
Sensitivity: 90dB (2.83V)
Minimum amplifier power: 50W
Dimensions: 14.3" (20.3" with outrigger) x 50.3" x 26.4"
Weight: 360 lbs. each (net)
Finishes: Black, dark silver (custom colors available upon request)
Price: $133,000 per pair (standard colors)

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Associated Equipment
Analog source: Basis Audio A.J. Conti Transcendence turntable with SuperArm 12.5 tonearm; Air Tight Opus cartridge; CH Precision P1 phonostage with X1 power supply; DS Audio ST-50 stylus cleaner, DS Audio ES-001 Eccentricity Detection Stabilizer, Levin record brush, Degritter ultrasonic LP cleaner
Digital source: Wadax Reference DAC, Wadax Reference Server, UpTone Audio EtherREGEN Ethernet switch
Amplification: CH Precision L10 Dual Monaural linestage; CH Precision M10 Dual Monaural power amplifiers
AC Power: Shunyata Everest 8000 conditioner, Shunyata Omega and Sigma NR V2 power cords; Shunyata AC outlets, five dedicated 20A lines wired with identical length 10AWG; two Göbel AC power cords (powering the subwoofers)
Support: Critical Mass Systems Olympus equipment racks and Olympus amplifier stands; CenterStage2 isolation, Ayra Audio RevOpods isolation
Cables: AudioQuest Dragon interconnects, AudioQuest Dragon Zero and Dragon Bass loudspeaker cables
Grounding: Shunyata Altaira grounding system
Accessories: The Chord Company GroundArray noise reduction
Acoustics: Acoustic Geometry Pro Room Pack 12, ASC 16" Round Tube Traps
Room: Purpose-built; Acoustic Sciences Corporation Iso-Wall System

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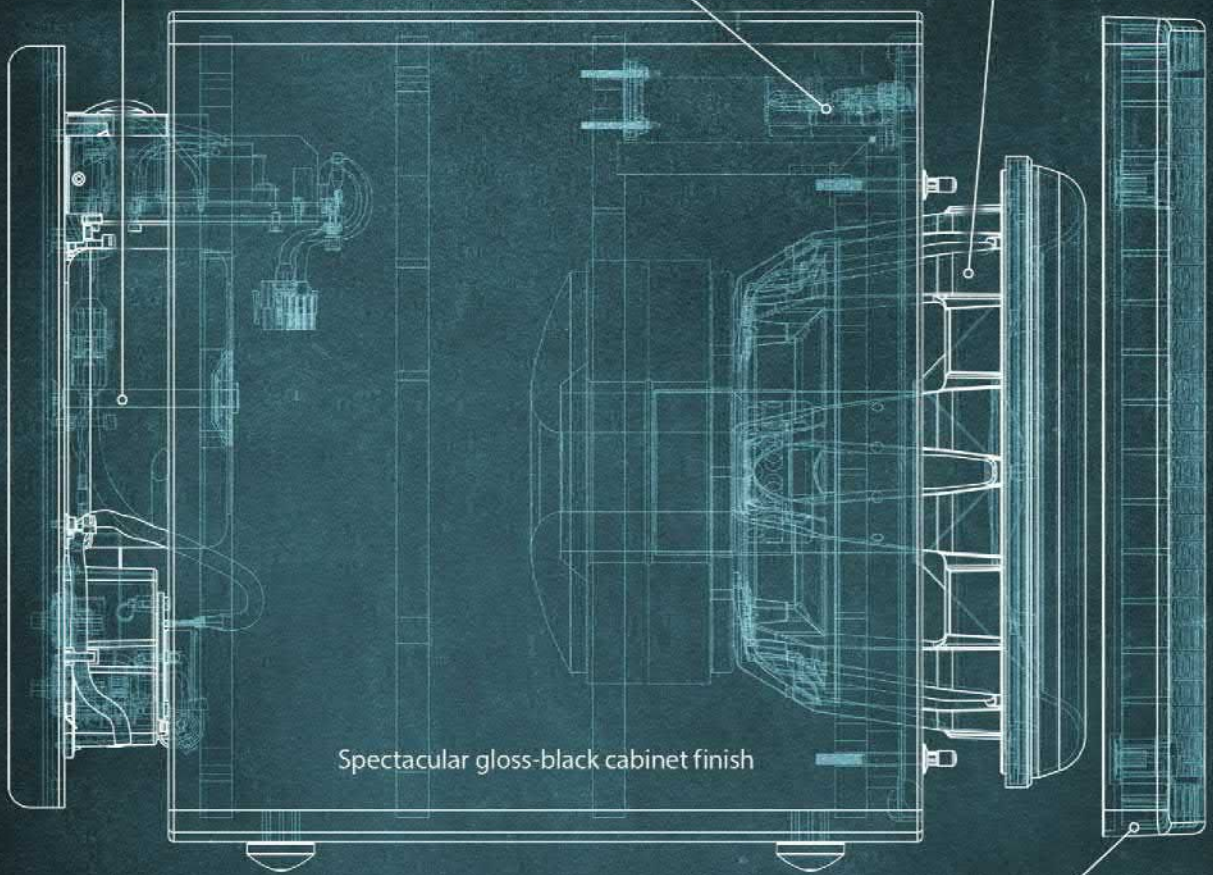

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There's another reason the Orion's transient performance is so impressive—the continuousness of transient fidelity across the spectrum from top to bottom. That is, the Orion didn't exhibit this superb transient behavior only over certain frequency bands, but consistently regardless of the instrument or the register in which it was playing. The music had a "snap" and immediacy that characterize live music. Although this quality was a defining characteristic of the Orion no matter what the music, a track that highlights the speaker's transient performance is "Havana Moonlight" from Spyro Gyra's *Got the Magic*. The percussion and acoustic guitar on this superb recording simply jump from the soundstage with lifelike immediacy.

The Orion's speed of attack and decay also contributed to the speaker's articulation and clarity. Listen to a recording with several stringed instruments simultaneously playing intricate passages, and you'll hear a newfound clarity of each instrumental line. The multiple parts are reproduced with each instrument's contribution clean and clear rather than smeared. A good example is Ruth Moody's rendition of the Bruce Springsteen song "Dancing in the Dark" from her album *These Wilder Things*. The arrangement features guitar, mandolin, pizzicato violin, and acoustic bass, with some spirited interplay between them on the outro. The Orion managed to keep separate and intact each instrument rather than smearing them into a confusing blur.

It may seem that I'm making much out of what may be considered a secondary aspect of loudspeaker performance, but the musical effect is profound. The Orion's qualities infuse the music with a startling sense of presence and immediacy, but in a totally natural, relaxed, and unforced way. The sense of rhythmic flow and energy is simply extraordinary, even when judged against cost-no-object designs. There's often a conflict; speakers that sound vibrant and lively do so at the expense of ease, the ability to completely relax into the listening experience, and ultimately, musical involvement. This is the kind of speaker I mentioned in the opening paragraph; you can point to how detailed and lively the speaker sounds, but it fails to put the listener into a state of deep immersion in the musical performance. It's the perverse triumph of sound over music. Conversely, speakers that are smooth and liquid lack the upbeat feeling of the musicians locking into the groove as a cohesive whole. The Orion exposes the false dichotomy, proving that incisiveness and relaxed engagement aren't mutually exclusive.

The Orion's bass performance was just as precise as the rest of the spectrum, with superb agility and pitch resolution. On the all-acoustic trio album, *The Rite of Strings,* Jean-Luc Ponty, Al DiMeola, and Stanley Clarke play some fast unison phrases. The Orion, to an extraordinary degree, reproduces these passages with absolute clarity of the double bass' pitch and dynamics. Despite the three instruments' very different timbres, registers, and dynamic envelopes, each was reproduced with clarity and precision. The Orion is particularly good at resolving pitch, conveying realistic bass timbre, and not smearing the attacks and decays of bass instruments. I could routinely hear exactly what the bass player was doing when the bottom end wasn't blurred. You can get deeper bass extension and more powerful bottom-end impact from a few comparably priced speakers that emphasize that aspect of performance, but I doubt that you'll find one with more musically rewarding resolution of the lowermost octaves.

A hallmark of Rockport speakers has been realistic reproduction of midrange and treble timbre along with ease and liquidity. That tradition continues in the Orion; instrumental texture was exceptionally clean, detailed, and free from grain or hardness. Listen to the extraordinary direct-to-disc LP by Hilary Hahn, *Retrospective*, on DG. The sounds of her violin and the piano are stunningly realistic through the Orion. The instruments' textures are infused with rich color, density, and warmth. The Mozart Violin Sonata in G Major reproduced by the Orion is one of the most lifelike reproductions of music I've heard (credit also goes to the extraordinary Basis Transcendence turntable, Air Tight Opus cartridge, and CH Precision P1/X1 phonostage).

The treble is similarly clean, managing to sound alive and energetic without crossing the line into brightness. The Orion is remarkably adept at reproducing very fine treble detail, such as the inner resolution of cymbal decays and percussion instruments with a high-frequency component. Listen to Jack DeJohnette's tender cymbal brushwork on Keith Jarrett's *My Foolish Heart* for an example of just how well the Orion manages to convey a real sense of texture and inner detail on the cymbals rather than sounding like a series of high-frequency transients.

Not surprisingly, considering the Orion's obviously exceptional design and execution, soundstaging was first-rate, but not just in the usual sense. Although the Orion's stage is wide and deep with precise image placement, it also has a tangibility by virtue of the speaker's sense of making instruments appear in your listening room rather than simply recreating sounds. Centrally positioned vocals were startling in their presence—listen to Dutch bluesman Hans Theessink on his album *Jedermann Remixed*, a record that sounds good on many systems, but transcendental in its palpability through the Orion. On this album, and many others, instruments were reproduced with that little halo of air around the images that add to the impression of musical realism. Moreover, the Orion's spatial presentation was completely detached from the speakers—instruments hung in three-dimensional space

Soundstaging was first-rate, but not just in the usual sense.

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with no apparent connection to the loudspeakers. The Orion also portrayed larger music with the appropriate spatial scale. Listen to the way the big brass tuttis "light up" the fabulous and expansive acoustic of the Morton H. Meyerson Symphony Center on *John Williams at the Movies*, a spectacular-sounding 176.4/24-bit recording by Keith Johnson, for just one example.

Although I have not heard the Lyra since I reviewed it seven years ago, and I drove it in a different room with different sources and amplification, my recollection is that the Orion is a little more incisive, the Lyra a bit more relaxed. The Lyra, in my memory, is a little sweeter—more *gemütlich*, as my dear friend and colleague Jonathan Valin would say. The Lyra's low-level resolution is also finer and more filigreed. But both are cut from the same cloth, with the benefits of Rockport's unique driver and enclosure technologies clearly evident.

CONCLUSION

A loudspeaker is like a filter between you and the music, coloring timbre, squashing dynamics, smearing transients, and myriad other faults. All speakers exhibit these flaws, but the better ones do so to a lesser degree. During my time with the Orion, I had the distinct impression of the speaker as imposing very little of itself on the music in each of these parameters.

In addition to its remarkable transparency to the source, the Orion excels in those areas that matter most in creating musical realism—timbral accuracy, top-to-bottom coherence, and dynamics. It's this last quality where the Orion most distinguishes itself from the competition, reproducing music's transient nature with a lifelike immediacy that is immensely rewarding musically. The Orion's transient "snap" infuses music with a sense of lifelike realism that few speakers realize—at any price. Electrostatics also have this snap, but often lack weight behind the transient, resulting in the "skeletal" epithet.

Although some may consider its modest size (modest in relation to its price) a demerit, the fact is that the Orion brings world-class performance to a loudspeaker that will easily fit into living rooms where a larger speaker would be a non-starter. Moreover, the elegant shape and organic curves allow the Orion to visually blend into a room rather than dominate it the way a rectangular box would.

The Rockport Orion is among the five best loudspeakers I've had in my home for review—a very short list that also includes Rockport's Lyra. The Orion is a speaker that I admired for its technical achievement, but more importantly, one that I loved for the unfailingly powerful musical connection it delivered.

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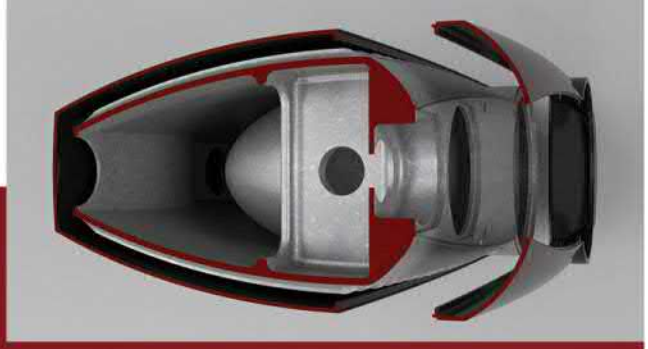

Design

RATHER THAN SIMPLY adapt existing components and construction methods to create Orion, Rockport instead embarked on a three-year development project that required designing all new drivers specifically for Orion as well as developing a new cabinet-construction method. As mentioned in the review, the idea was to create a three-way loudspeaker that provides full-frequency-range performance with low distortion in a modestly sized enclosure. Such a speaker would fit in many homes where a larger speaker would be intrusive.

The first design consideration was the woofer size. To realize visceral grip in the bottom end, Payor chose 13" for the woofer diameter. This choice in turn required a slightly larger midrange driver than Rockport typically uses—7" in the Orion compared with 6" in the Lyra (although the Lyra employs two midrange drivers). The Orion's larger midrange driver conferred greater dynamic capabilities at the bottom of its operating range that better matched the woofer's dynamics. The crossover point is very low 140Hz.

The midrange hands off to the tweeter at 1800Hz, a surprisingly low crossover frequency. This transition typically occurs between 2.2kHz to 3kHz. Payor engineered the drivers for lower crossover points so that each driver could provide the greatest dynamic capability at the lower ends of their passbands. Crossing over the tweeter at this low frequency was made possible by an entirely new tweeter design developed specifically for the Orion. Although the beryllium dome tweeter has extension to 25kHz, its behavior at 2kHz was of greater concern. The tweeter has a diameter of 31mm (rather than the typical 26mm) and is mounted in a shallow waveguide. The waveguide serves three functions. First, it increases the driver's sensitivity so that it requires less amplifier power to produce a given sound-pressure level (which reduces heat in the tweeter). Second, the waveguide narrows the tweeter's dispersion at the lower end of its operating range so that its dispersion better matches the midrange driver's dispersion at the upper end of the midrange's operating range. Third, the waveguide, in conjunction with the larger dome, imbues the tweeter with greater dynamic ability at the bottom end of its passband. The tweeter's increased dynamic capability around 2kHz better matches the midrange driver's dynamic capabilities at the top end of its range. This overall approach avoids a dynamic discontinuity at the midrange-to-tweeter crossover point. That is, there's not a band of frequency (the lower end of the tweeter's passband) with restricted dynamics relative to the rest of the frequency spectrum. Finally, the waveguide makes the tweeter's effective diameter larger than the dome itself.

Looking next at the drivers' design, they are evolutions of the carbon-fiber sandwich construction Payor pioneered in the early 2000s. This cone structure is common today among higher-end speakers, but was novel 20 years ago. Very thin and lightweight carbon-fiber skins flank a foam core, with the resulting beam section exhibiting great strength and rigidity yet remaining lightweight. For Orion's larger midrange driver, a new type of carbon-fiber fabric was utilized. The midrange driver's low crossover point required that the driver be built almost like a midrange-woofer in a two-way speaker, with a larger and more robust basket, greater heat ventilation, and higher power handling. As with all Rockport drivers, much effort went into reducing losses caused by "stiction" of the suspension system. Such "stiction" creates a threshold below which the driver cannot respond to very low-level signals, reducing perceived musical resolution and inhibiting transient speed. Consequently, the surrounds are very narrow, and vary in thickness between where the surround attaches to the cone and where the surround attaches to the basket. Payor has spent many years modeling surround materials, shapes, and thickness profiles to arrive at the ideal combination of parameters. The overall concepts and execution in the Orion's 7" midrange driver are very similar to that of the 6" unit in the flagship Lyra. In both drivers, the measurable distortion is –60dB, an amazingly low figure. The tweeter's third-harmonic distortion is –75dB, again astoundingly low distortion. Here's another amazing spec; the Orion's response is flat through the midrange to ±0.25dB (Payor sent me the frequency-response plots). Speakers don't get any flatter than that.

The bass driver was designed to have a large surface area with as lightweight a cone as possible. A loudspeaker's overall sensitivity is determined by the woofer's sensitivity; high sensitivity was thus a design goal in creating this new woofer. The Orion's woofer has a sensitivity of 94dB, a relatively high figure, which allows for an overall system sensitivity of 90dB. It features all the hallmarks of Rockport's previous woofers, including a massive motor coupled to a low-loss suspension, along with the carbon-fiber sandwich cone construction.

Looking next at the enclosure, as described earlier the Orion features a dual-shell enclosure with the inner shell made from a single, massive aluminum casting and an outer structural carbon-fiber shell. The cavity between them is filled with 115 pounds of Rockport's proprietary high hysteresis visco-elastic core material. This material was newly developed specifically for Orion and differs from the material in the Lyra. The aluminum inner housing is cast as a single piece, complete with a "catenary profile" midrange chamber, internal bracing, and ribs on the outer surface that stiffen the structure as well as increase the surface area between the aluminum housing and the core material for greater damping. The baffle is carbon fiber, bonded to the outer shell along a mortise and tenon joint with a structural epoxy adhesive. Unusually, the woofer mounting surface is slightly larger than the baffle itself, requiring a "boss" (a cylindrical protrusion) on the baffle to accommodate the woofer's diameter. The enclosure is thus made from three pieces, with no fasteners and no conventional joinery. In addition to being dense, stiff, inert, and highly damped, this construction technique allows the speaker's shape to be optimized for driver placement, ideal wave launch, and low diffraction. Although not quite as inert as the Lyra's (560-pound) double-aluminum enclosure, the Orion's cabinet reportedly comes close in performance.

The ported enclosure is tuned to 27Hz, yet due to Rockport's unique alignment, its rolloff is 12dB/octave in the first octave down to 20Hz (anechoic), improving in-room response. tas

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Manufacturer Comments

Kuzma Safir 9 Tonearm

I would like to thank Michael Fremer for a very comprehensive review of the Kuzma Safir 9 tonearm, which includes a lot of good technical information related to the behavior of tonearms in vinyl replay. I have a few comments/further thoughts on the continuous evolution of improving vinyl replay.

It is true that the Safir 9 decreases the VTF when the tonearm itself moves above the horizontal level due to record warp. However, when the warp pushes up the cartridge, that increases VTF as well, so we tried to combine these two effects to make VTF more even by moving the center of gravity upwards.

The old audio statement that "less is more" is nicely described in this review. MF writes that many tonearms add colorations which can add a pleasing warmth in the bottom octaves, but once you experience what the Safir 9 can do for truly great recordings you will have trouble going back. The problem is that some arms cannot deal with such low-frequency energy, so they cloud and obfuscate details you do not miss until you hear them. That explains a lot about the difference in musical reproduction from records.

Thanks for a great review.

Franc Kuzma

Dynaudio Confidence 50 Loudspeaker

On behalf of Dynaudio, we thank Andrew Quint, Robert Harley, and TAS for such a vivid and effusive review of our Confidence 50. The company is extremely proud of the high level of performance and value we've achieved in our latest offerings, so it was extremely satisfying and validating to follow Andy's journey reporting on the very best we have to offer for his listening space. The current range of Confidence models were among the first products to be designed using our Jupiter measurement facility. Jupiter—combined with our 40+ years designing and building our own drivers, cabinets, and crossovers—allowed us to develop the best loudspeaker in our history, and one that sees some of our best technologies express their full potential. Although the bulk of the time it took to place the Confidence 50s in Andy's room to our satisfaction was related to getting speakers in the right position for accurate bass reproduction, it was the flexibility afforded by the DDC lens that allowed us to achieve the "lock" Andy wrote about. Perhaps they were trickier to place than some speakers Andy has had, but the reality is that highly accurate loudspeakers are responsive to small placement changes, and paying close attention to these changes can yield exceptional results.

Michael Manousselis & John Quick
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Jonathan Valin, THE ABSOLUTE SOUND
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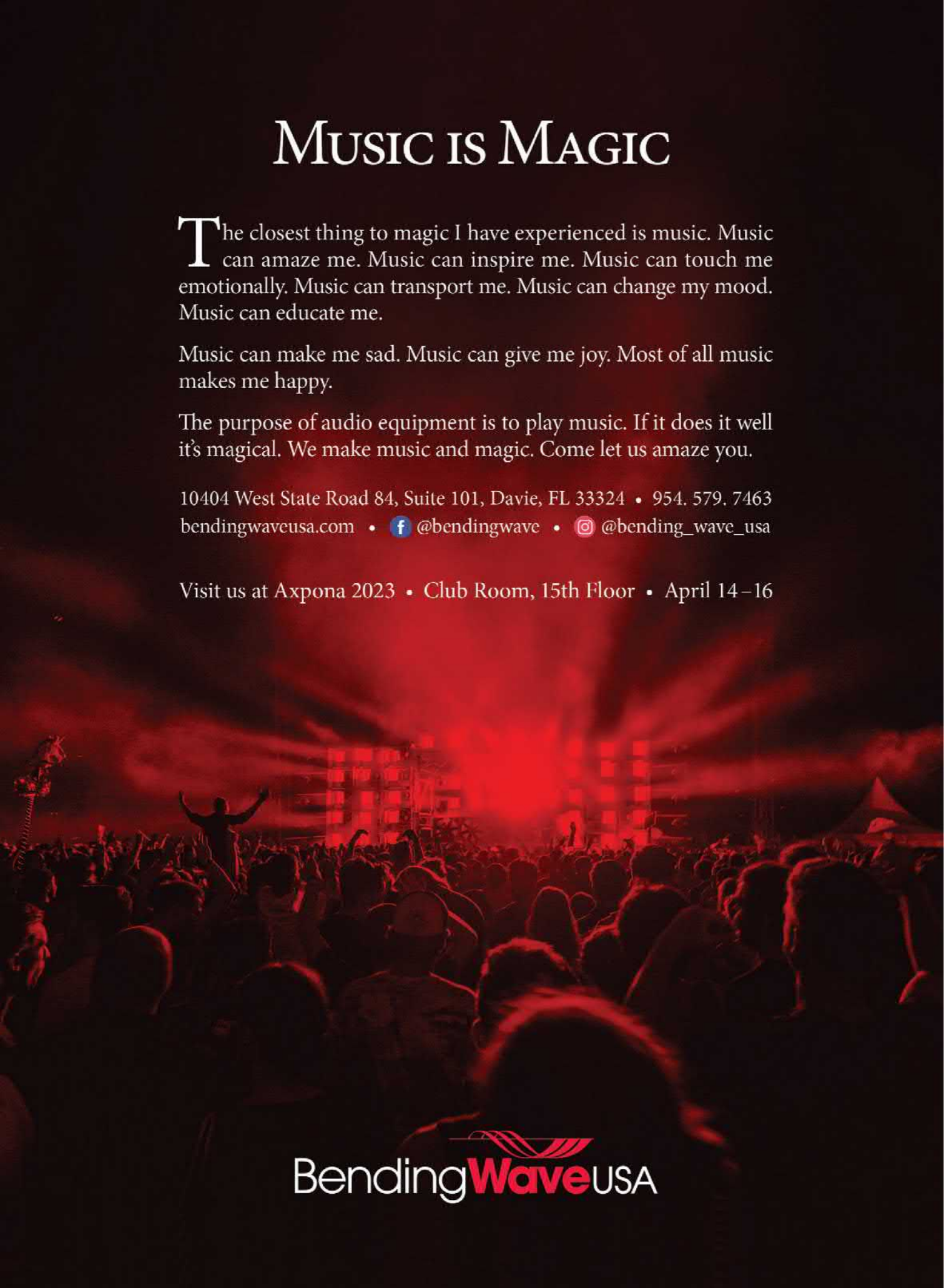

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To Hell and Back

New Remix Illuminates Dylan's Darkest Journey

Greg Cahill

PHOTO BY DANNY CLINCH

"I try to live within the line between despondency and hope," Bob Dylan once told the *LA Times*. "I'm suited to walk that line right between the fire." He nailed that high-wire act on *Time Out of Mind*, the 1998 Grammy winner for Album of the Year, which arrived at a time when many fans felt the rock legend had lost his mojo. Now that album has spawned the insightful *Fragments—Time Out of Mind Sessions (1996–1997): The Bootleg Series Vol. 17*. This beautifully packaged ten-LP super-deluxe edition is built around a newly remastered edition of *Time Out of Mind*, remixed by star engineer Michael Brauer. He skillfully peels back producer Daniel Lanois' heavy poly-rhythmic percussion and hi-tech sheen to expose the emotional bones of the material. The recordings are packaged in five double-LP sets stored in a 12.75" x 12.75" cardboard slipcase, which includes the two-LP 2022 remix; four LPs of outtakes and alternate versions; two LPs of live recordings (1998–2001), and two bonus LPs with 12 tracks culled from *Tell Tale Signs: The Bootleg Series, Vol. 8*. There's also a 64-page booklet of photos, ephemera, and essays.

The fidelity of the digital remaster is high and the pressings, made from analog-to-digital transfers, are dead quiet. This material also is available on CD, a two-LP highlight edition, and streaming.

Time Out of Mind is Dylan at his most honest, most confessional, and most compelling, baring his soul while forsaking the cryptic imagery that often masked his early material. There is nothing superficial about these heartfelt songs—*Time Out of Mind* is not an easy listen if your relationships are on the skids. Such songs as "Tryin' to Get to Heaven," in which the bard declares "When you think you've lost everything/You find out you can lose a little more," are the artistic offspring of *Blood on the Tracks*, his chilly 1975 ode to estranged wife Sara. On the outtake "Dreamin' of You," an unnamed romantic obsession dominates his every waking hour and has reduced him to "a monkey on a chain."

It's Dylan hitting emotional rock bottom.

Released in 1997, *Time Out of Mind* was Dylan's first set of original rock material in seven years. It followed 1993's solo-acoustic *World Gone Wrong* and arrived seven years after the disappointing *Under the Red Sky*. The songs are informed by folk, blues, rock, and gospel and played by an ace band that includes blues guitarist Duke Robillard, pedal-steel great Bucky Baxter of Steve Earle and the Dukes, and organist Augie Myers of the Texas Tornados. The players fashion a vintage R&B sound that Dylan has adhered to for the past three decades. The songs themselves can be quite cynical, even by Dylan's standards, as he reflects on mortality and the disappointments of life. Reportedly shaken by guitarist Jerry Garcia's untimely death, Dylan spent five years crafting these songs. He often wears despair on his shirtsleeve: "I'm in the land of the lost/Where thieves come to die," he croaks on "Not Dark Yet." On "Dirt Road Blues," he shares what it's like to live with "the miseries of the world" in his eyes.

Time Out of Mind is not an easy listen if your relationships are on the skids.

He bemoans betrayal and treads "streets that are dead" on the pitiful "Love Sick," one of the bitterest romantic ballads in the rock oeuvre, and laments his lingering sense of alienation on the slow blues "Million Miles." Yet, he also elicits a glimmer of hope on the ethereal "Standing in the Doorway" while the sprawling "Highlands" evokes a slight whimsy.

The remixes, now stripped of studio haze and endowed with a fresh sense of intimacy, showcase the blues-soaked heart of such songs as "Can't Wait," "Dirt Road Blues," and the icy "Cold Irons Bound," which rockets from the speakers with renewed vigor. The alternate tracks, especially "'Til I Fell in Love with You," underscore how an artist of Dylan's caliber can bend the emotional expression of a song through key changes and subtle tempo shifts. Outtakes include the stunning black spiritual "The Water Is Wide," the contemplative "Dreamin' of You," the folksy "Red River Shore" and the bluesy "Mississippi," which was bumped to 2001's *Love and Theft* after a spat with Lanois. The concert recordings—including an electrifying live performance of "Make You Feel My Love," previously released as the B-side to the "Things Have Changed" maxi-single—are sequenced to create an imaginary stage performance of the entire album, but with "Mississippi" restored in the lineup.

Twenty-five years down the road, this reexamination of *Time Out of Mind* shows that Dylan plumbed the darkest depths of his soul to reignite his career with personal tales befitting his 2016 Nobel Prize in Literature. tas

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When Bowie Became Bowie

Deluxe Edition Sheds Light on *Hunky Dory*

Jeff Wilson

In 1960 an aspiring British pop star whose full name was David Robert Jones dubbed himself Davy Jones. When another British singer named Davy Jones arrived on the scene in 1965, however, Davy Jones #1 donned a stage name that, in retrospect, seemed quite prescient in light of the meteoric rise to fame his namesake was about to experience as a member of the Monkees. For the artist who christened himself David Bowie, the name change turned out to be a blessing in disguise, as a fresh new persona must have seemed liberating to an artist who, as his career developed, would constantly reinvent his image.

There was still work to be done, however. During the late 60s, Bowie had a tough job distinguishing himself from other dreamy-eyed folkies, and while 1970's *The Man Who Sold the World* was sadly overlooked, there was enough psych-tinged blues rock during that period that you can begin to understand why it got lost in the shuffle. It wasn't until 1971's *Hunky Dory* that David Robert Jones fully transformed into David Bowie—in other words, that distinct figure who, regardless of how many influences seeped into his songs, left an indelible imprint on everything he played.

However, Hunky Dory didn't happen overnight, and one of the pleasures of sifting through Parlophone's new 4-CD/1-Bluray behemoth entitled *Divine Symmetry: The Journey to Hunky Dory*, complete with demo tracks, live performances, alternate mixes, a 100-page hardback book packed with photos and liner notes, and a 60-page composite of notebooks from that period—is the light it sheds on the album's development during the period leading up to the December 1971 release of *Hunky Dory*. The compilation begins with demo tapes Bowie recorded of songs while they were still in their infancy. Along with material that did or didn't make the final cut, you'll hear, on these demo tapes and on some BBC Radio performances that took place between June and October of 1971, future *Hunky Dory* tracks before they were completely fleshed out in London's Trident Studios. *A Divine Symmetry* concludes with a 2015 remix of *Hunky Dory*

In the late 1960s, Bowie had a tough job distinguishing himself from other dreamy-eyed folkies.

and a fully reimagined *Hunky Dory*. The mixes for the latter, which is titled *A Divine Symmetry (An Alternative Journey Through Hunky Dory)* and can also be purchased separately as a vinyl LP, include four mixes that predated the original release while recent remixes take liberties that, because the album title and cover were changed, won't prompt charges of tampering with history.

Neither redo fusses with the tracking order of *Hunky Dory*, and wisely so, as the sequence of songs helps determine the character of the album. *Hunky Dory* is front-loaded with pop songs that have radio airplay written all over them. On "Changes," "Oh! You Pretty Things," and "Life on Mars," a pre-Yes Rick Wakeman creates a musical hall undercurrent on acoustic piano while the layered vocals by Bowie and Mick Ronson, a string section, and dramatic use of dynamics create a panoramic soundscape that, combined with catchy hooks and intriguing lyrics, made for riveting pop music. On the piano-based demos and scaled-down live performances leading up to *Hunky Dory*, the music hall element is much more prominent, and the music doesn't have the boldness and the sense of drama it would later have. The contrast between the early takes and the finished product sheds light on the evolution of *Hunky Dory*—and with it, David Bowie.

A similar contrast exists between the demo of "Quicksand" and the finished version, only this time, instead of piano, the acoustic guitar strumming of Bowie and Mick Ronson help shape the sound. The demo has a strong psych-folk vibe, and you still hear that on the *Hunky Dory* version, but the bold dynamics on the finished product add a new dimension to the performance. We don't hear any precursors to the "The Bewlay Brothers," but a similar aesthetic is at work, as what seems like a folk song at first gives way to a rich musical tapestry with a heightened sense of drama.

For the record, I'm quite fond of Bowie's demos and live performances that lean in a folk direction—to the point where, on Qobuz, I created a playlist entitled *Folky Dory*. Have a listen if you'd like a taste of the folkier side of David Bowie—more Tyrannosaurus Rex than T. Rex, with a touch of Neil Young ("Bombers") and chanson (Jacques Brel's "Amsterdam")—shortly before he began to play a major role in shaping the sound of the 70s. tas

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One Hundred Dreams and Counting

For Satoko Fujii, Jazz Is "Alive and Changing"

Derk Richardson

Satoko Fujii—pianist, composer, free improviser, bandleader—wasn't keeping track of how many records she had made in the 26 years since releasing her debut, *Something About Water*, a collection of duets with her mentor, pianist Paul Bley. "I was just following the things that I wanted to do," she explained in a recent video conversation from the home she shares with her husband, trumpeter Natsuki Tamura, in Kobe, Japan. "Someone actually had to tell me, you have one hundred albums very soon. And then I counted." One of the most prolific of 21st-century avant-garde jazz musicians (a label she might challenge), Fujii has recorded solo piano discs; duo sessions with trumpeter Tamura, violinists Mark Feldman and Carla Kihlstedt, pianists Myra Melford and Alister Spence, bassist/flutist Joe Fonda, and vibraphonist Taiko Saito; seven trio albums with bassist Mark Dresser and drummer Jim Black; a panoply of acoustic and electric small groups with such diverse musicians as accordionists Andrea Parkins and Ted Reichman, electronics virtuoso Ikue Mori, and rock drummer Tatsuya Yoshida of the Ruins, and nearly two dozen albums with her jazz orchestras based in New York, Tokyo, Nagoya, Berlin, and Kobe. That doesn't take into account more than 30 recordings as a side person. In 2018, Fujii released one new album every month to celebrate her sixtieth birthday, a milestone known in Japan as *kanreki*, a pivotal moment of rebirth and reflection.

"I'm addicted to making records," she told me in a 2002 interview during a visit to San Francisco. "And all formats that I do make different fun for me." Approaching her landmark 100th album as a leader, she was looking for a new format, and a new kind of fun, "something special, not the things I already did so far," she said. So, on September 20, 2022, she brought together her first nonet, a "dream come true" lineup with Tamura and Wadada Leo Smith on trumpets, Ingrid Laubrock on tenor saxophone, Sara Schoenbeck on bassoon, Ikue Mori on electronics, Brandon Lopez on bass, and Tom Rainey and Chris Corsano on drums. Recorded live with only one rehearsal the afternoon before the concert, the five-part suite, *Hyaku: One Hundred Dreams*, was released on December 9, 2020, on Fujii and Tamura's own Libra Records label.

Approaching her landmark 100th album as a leader, Fujii brought together a "dream come true" lineup.

"The lineup is very different and the instrumentation is very new to me," Fujii said, noting that she had never before played with a bassoonist. Nor had she often incorporated saxophone into her groups other than the big bands. But the reeds, brass, percussion, and so on were not her primary concern in putting together the ensemble. Rather, it was what Fujii characterized as "the sound of the person," not her or his instrument. "It probably sounds very strange to you," she said, "but before we played, I knew music could not be bad with such great musicians. I wanted to feature everyone in the band, because all of them are great improvisors, so I tried not to write so much. I needed something to glue everything together, but not specific for the instrumentation. All the harmony was in my brain. I knew it would work."

Fujii composed *One Hundred Dreams* during the Covid pandemic lockdown, a circumstance she turned to her own advantage. "It was not so bad for me," she explained, "because if the pandemic didn't happen, I probably would have just kept touring. I'm not a person who can relax. I need to work. It was kind of a good time to get some vacation." But of course, she worked. She and Tamura streamed performances on the internet. She taught herself how to record, engineer, mix, and edit her own music in her home studio, releasing 16 digital-download albums on Bandcamp from July 2020 through April 2022. Her experimentation led to the sound-collage recordings *Piano Music*, electronically manipulated fragments of solo piano, and *Bokyaku*, in which she plays piano amid iPhone field recordings of trains,

PHOTO BY KOSUKE OKAHARA

planes, helicopters, washing machines, dripping water, and construction sounds. Fujii has since returned to touring and recording with other musicians—her duo album with guitarist-turntablist Otomo Yoshihide was released on February 9. She had missed not getting energy from audiences and collaborators, but, she noted, "the good thing was I didn't need to think about other people, and I could just dig into myself," she said. "I started loving my music. I probably like my music better than before."

Early in her musical development, loving her own music was an issue for Fujii. She studied classical piano in Tokyo from the age of four. At 16 or 17, she found herself itching to improvise but didn't know how to break away from the written page. Inspired in part by her classical teacher, pianist/composer Koji Taku, a student of Alfred Cortot and Nadia Boulanger, who, at 60 (*kanreki*), resigned his professorial position at Gendai University and started playing jazz in a Tokyo bar, Fujii stepped back from the piano and experimented for a time by improvising with her voice and "hitting things." When she returned to the piano in her twenties, she studied jazz first with Fumio Itabashi in Tokyo, then at the Berklee College of Music in Boston (1985–1987), and finally at the New England Conservatory (1993–1996), where she met and eventually studied with Paul Bley.

"It was a revolution," Fujii said of working with Bley. "The biggest thing for me was, we didn't spend so much time in front of the piano—just talking, talking, talking. When he did say 'play something for me," I don't remember what I played, probably some standard piece. He said, 'You need to play your stuff, not like somebody else.' I was like a very serious jazz student who thought I needed to play like some jazz giant, but he said, 'Just be yourself.' That was a big thing for me because I couldn't accept myself back then, but when Paul Bley says be yourself? OK!"

For Fujii, being herself means not worrying about labels. As evidenced in the first moments of *Hyaku: One Hundred Dreams*, her playing can sound as delicate and spacious as Erik Satie. "I play one note, and then find what's next," she said of her approach to composing. Or, as it does at the end of that opening solo and in the ensemble free-for-alls, as ferociously dense and ominous as Cecil Taylor. It's all part of who she allows herself to be. "I took such a long time to be released from classical music," she said, "and then I spent like ten years studying jazz, and was trapped in jazz, and then I took another ten years to be free from jazz. For many people, jazz has a very narrow meaning, and they probably would say I'm not a jazz player. But jazz is alive and changing all the time, and in that sense, I'm a straight-ahead jazz player." tas

Greatest Grunge Rock Reissues

Strange Tales from the Mosh Pit

Gil Kaufman

If there were a Mount Rushmore of Grunge, the four faces would look something like: Kurt Cobain (Nirvana), Eddie Vedder (Pearl Jam), Layne Staley (Alice in Chains), and Chris Cornell (Soundgarden). But there is so much more to the heavy, angsty music that emerged from the Northeast in the early 1990s. The wave that briefly took over the world with a sludgy sound that put punk, heavy metal, goth, hardcore, and a touch of pop into a meat grinder didn't last long, but it produced more than a handful of instant classics. Sure, you know the landmark ones—*Nevermind*, *Ten*, *Dirt*, and *Badmotorfinger*—but check out this list of the ten grunge album reissues (and three that should be reissued) by bands you know, and some you should.

The wave that briefly took over the world produced more than a handful of instant classics.

Alice in Chains: *Dirt.*

Columbia's 2022 remastered version of Alice in Chains' 1992 sophomore album puts the group's grinding, grim vision into further, clearer focus. The Staley-fronted group that spun off the darkest stories of disease, dysfunction, and drug abuse from an already dark era reaches their peak on such beloved songs as "Them Bones," "Down in a Hole," and the harrowing Vietnam War-inspired "Rooster." Sadly, there are no bonus tracks on this collection, but the renewed clarity of late singer Staley's howling dread and guitarist Jerry Cantrell's swirling, dinosaur-stomping riffs make it a must-listen.

The Gits: *Seafish Louisville.*

Other female-fronted grunge bands such as L7, Babes in Toyland, and Hole (see below) reached a wider audience, but this group burned with an intensity that equaled all those better-known acts. Sadly, their promise was never reached after singer Mia Zapata was found raped and murdered in the summer of 1993. Broken Rekids' posthumous 2000 compilation of live tracks and alt takes is a great intro to their sound, which mashes up blues, punk, and heavy rock. It's anchored by Zapata's throaty, world-weary roar on the never-before-heard album opener "Whirlwind," the galloping cowpunk fury of "Absynthe," and face-smash blur of "Insecurities." Though their ride was tragically short, this collection is testament to the Gits' live energy and Zapata's arresting punk power.

Mudhoney: *Superfuzz Bigmuff.*

Other flannel-flying acts made it to arenas and festivals, but Mudhoney were one of the earliest and most dedicated purveyors of what would become known as the "Seattle Sound." Sub Pop's 32-track 2008 compendium of the group's debut EP and other early singles, compilation tracks, demos, and live recordings proves why Mudhoney was the group all the other bands loved. Singer Mark Arm's slacker yowl on debut single "Touch Me I'm Sick" kicks off a deep dive that also features a doom rock take on Bette Midler's "The Rose." There's also an ominous 1988 live version of "Sweet Young Thing Ain't Sweet No More" and a blazingly chaotic "Here Comes the Sickness."

Green River: *Dry as a Bone.*

If you're looking for the origin of the Seattle sound, this supergroup's sole studio album is a great place to start. Formed in 1984, Green River featured future Mudhoney, Mother Love Bone, and Pearl Jam members. With Mark Arm's strangulated shout and Stone Gossard and Bruce Fairweather's relentless, slashing guitars, a 2019 deluxe edition reissue of what was their debut mini-LP (plus a few tracks from the must-have 1986 Seattle scene compilation *Deep Six*) rips on tracks such as "This Town," sludgy noise squall "PCC," and the snarly, Stooges-like drone "One More Stitch." You can hear the seeds of almost everything that came after in this collection's raw, righteous noise.

The Melvins: *Ozma/Bullhead.*

By many accounts, without the Melvins there would have been no Nirvana, to say nothing of the entire Northwest scene. The legendarily heavy group founded by singer/guitarist Buzz Osborne and drummer Dale Crover in 1983 helped forge the template for the genre with a patented mix of shouty, menacing vocals and a heavy, thick sound anchored by rumbling bass and a mix of Black Sabbath dread and molasses-covered punk energy. A great intro is Boner

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Records' 2015 reissue combining their second (1989) and third (1991) albums, which contain such classics as the plodding "Kool Legged" and "Agonizer" and the bashing, somewhat reverent (ironic?) cover of the Kiss instrumental "Love Thing" (aka "Love Theme From KISS.") Most songs clocked in at less than three minutes, but epic (8:35) *Bullhead* lead-off "Boris" became a fan favorite as well as a cheat sheet for the band's epically noisy, dark, and weird sound. Balance that with the blistering, distorted "Zodiac" and "Anaconda" and you get a sonic attack that is majestic even as it sounds like it might fall apart at any time.

Nirvana: *Bleach.*
They weren't first, but Nirvana's 1989 debut now feels like the Rosetta Stone of grunge. Allegedly recorded for Sub Pop for $606, it contains the band's signature mash-up of Black Sabbath rumble and Cobain's whisper-to-a-primal scream yelp on "Blew," "Floyd the Barber," and the bouncy Shocking Blue cover "Love Buzz." For the many who missed seeing the live wire trio in person, Sub Pop's 20th anniversary bonus edition featuring a February 1990 set at Portland's Pine Street Theatre is like a front row seat to the mayhem. From the Led Zeppelin rumble of "School" to the throat-shredding "Dive" and a double-time rush through their Beatles-on-speed bop "About a Girl," it's the perfect introduction to the band that would become the most important, and biggest, rock group of their era.

Pearl Jam: *Ten (Redux).*
Though they would become the most enduring band from the era to stay together, PJ were never satisfied with the sound of their landmark 1991 debut. So, in 2013 the Eddie Vedder-led group tapped producer Brendan O'Brien to remix the original for a revamp that pushes guitarists Gossard and Mike McCready's instruments further upfront while removing some reverb. The results are even more explosive, meatier versions of such hits as "Even Flow," "Alive," "Jeremy," and "Black," as well as a handful of interesting bonus tracks. Check the polished "Porch" and "Release," but definitely hang out for a version of Gossard's "Brother" (with Vedder's vocals), as well as rollicking early demos of "Just a Girl," the goofy rehearsal outtake "Evil Little Goat," and the *Singles* soundtrack rager "State of Love and Trust."

Screaming Trees: *Sweet Oblivion.*
As spooky as AIC's singer Staley's voice could be, Trees singer Mark Lanegan's haunted wail pulled you intensely close even as his cool detachment gently walked the other way. Anchored by towering opener "Shadow of the Season" and the two greatest flannel-era ballads—the swirling "Nearly Lost You" and acoustic weeper "Dollar Bill"—the Trees' mix of psychedelia, folk, stoner rock, and face-punch punk set them apart from the pack. Among the non-album tracks on Cherry Red's 2019 expanded version is the boogie-ing album outtake "E.S.K.," a swinging cover of Small Faces' "Song of a Baker," and a chilling acoustic take on Thomas A. Dorsey's gospel song "(There'll Be) Peace in the Valley (For Me)."

Soundgarden: *Superunknown.*
Soundgarden firmly stepped out of the grunge world and shot their shot at becoming a world-dominating, straight-up arena rock band on their fourth album. Along with such indelible wailers as "Fell on Black Days," "Black Hole Sun," and "Spoonman," A&M's 2014 deluxe edition is expanded with 16 extra demos, rehearsal takes, and B-sides that provide a window into the rough stones that turned into the polished rocks on the final version. Some, like "Sun," are relatively close to their final presentation (if a bit more psychedelic), while the rehearsal take of "The Day I Tried to Live" is shot through with a fierce, loose urgency. The Steve Fisk remix of "Spoonman" swings with a bigger, more layered beat that hints at what could have been. Other rarities, like the Melvins-ish "Exit Stonehenge" and bizarre sound collage "Jerry Garcia's Finger" give a peek at the band's more experimental side.

U-Men: *U-Men.*
This avant-punk Seattle band fronted by charismatic singer/screamer John Bigley pre-dated the grunge explosion, but by most accounts had a huge influence on some of the genre's biggest stars. A broiling mix of post-punk, art rock, and melodic thrash, 2017's 30-track Sub Pop compilation offers a deep whiff of their driving, anarchic sound, rounding up songs from their only full-length album (1988's *Step on a Bug*) and a variety of singles and EPs. Songs like the whipsawing "Shoot 'Em Down" set the table for everything from the Jesus Lizard's frantic jazz skronk to Nirvana singer Cobain's iconic quiet-loud vocal freakouts.

Not all the leading lights of the genre have gotten their deluxe/reissue due, especially some of the female-fronted bands also affiliated with the parallel feminist Riot Grrrl movement. Also check out:

L7: *Bricks Are Heavy.* (30th anniversary vinyl remaster, Rolling Live Studios)
Produced by Garbage's Butch Vig, the third album from this L.A. punk band is a vital, snarling runaway train of punk pugnaciousness. From relentless opener "Wargasm" to signature Joan Jett-indebted blasé slacker anthem "Pretend We're Dead," *Bricks* will leave you as battered and bruised as a sweaty night in the mosh pit.

7 Year Bitch: *¡Viva Zapata!*
With a title paying homage to the late Gits singer, 7YB's second album absolutely crushes thanks to Selene Vigil's classically antagonistic punk vocals and face-punch anthems such as "The Scratch," the furious "M.I.A.," and the self-explanatory "Kiss My Ass Goodbye."

Hole: *Pretty on the Inside.*
Though they'd quickly lean more heavily into a more polished California pop sound, the open-wound 1991 debut from this Courtney Love-fronted band feels like a guttural scream from the depths of the singer's soul. As you might expect, there's nothing pretty about the seasick "Teenage Whore" or the narcotic black hole of "Mrs. Jones." tas

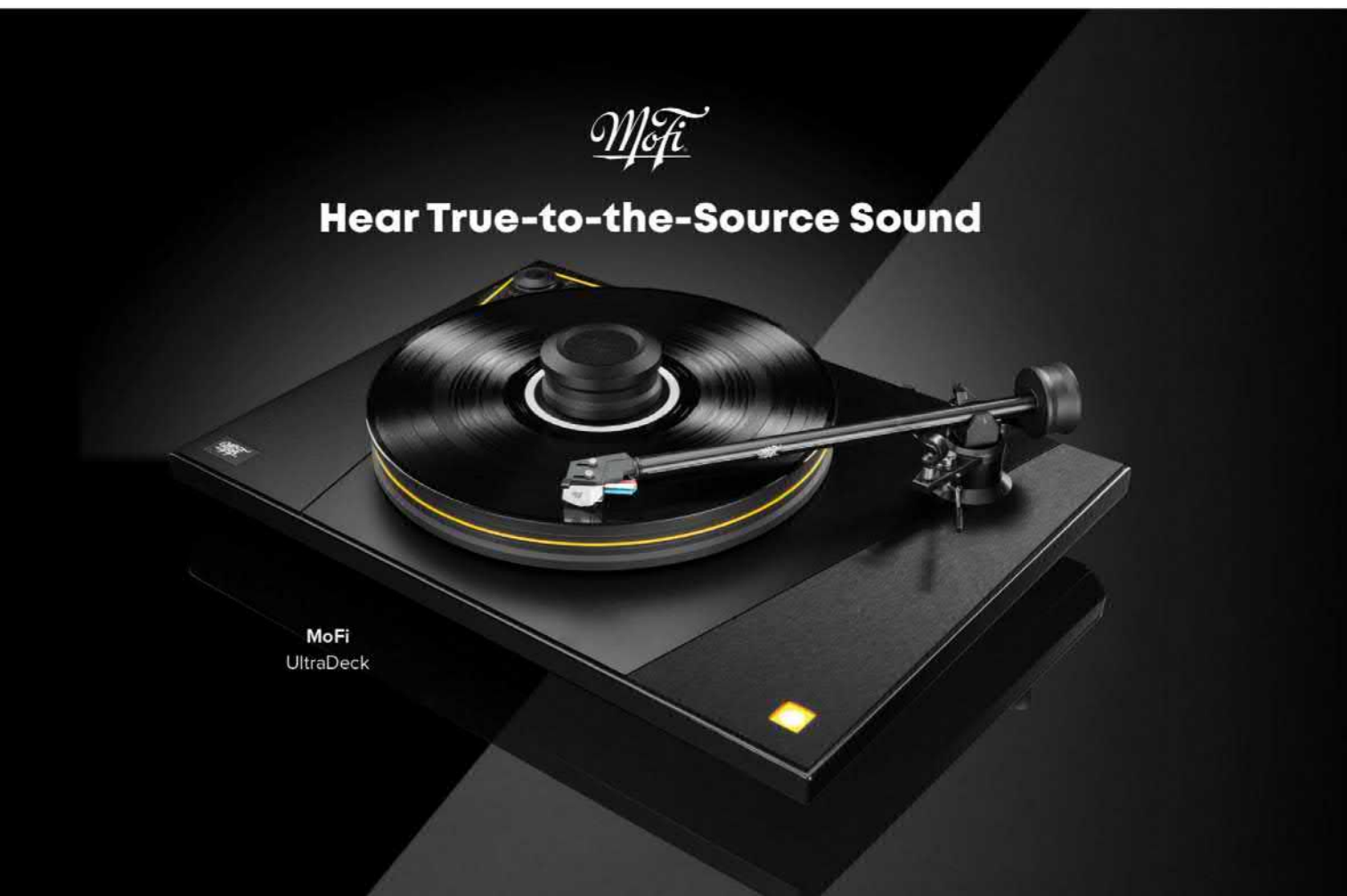
Hedvig Mollestad's *Maternity Beat*

Collaboration with Jazz Orchestra Spurs Guitarist to New Heights

Jeff Wilson

In 2011 Norwegian guitarist Hedvig Mollestad released her first record as a leader. Earlier in her career, Mollestad led what could loosely be described as a fusion-influenced progressive power trio whose music never lacked for energy—or, for that matter, depth and complexity. On 2020's *Ekhidna*, Mollestad worked with an expanded lineup that included two keyboardists who helped usher in a more layered sound with antecedents in 70s Miles or *Lotus*-era Santana. For her next release, *Tempest Revisited* (2021), Mollestad added more instruments while putting her own spin on compositions by the Norwegian classical composer Arne Nordheim. On her latest record, *Maternity Beat*, Mollestad joins forces with the 12-piece Trondheim Jazz Orchestra, whose instrumentation includes saxophones, violin, flute, trumpet, keyboards, double bass, percussion, and drums. Again the expanded lineup seems to fire Mollestad's imagination, and the result is an album that demands a close listen.

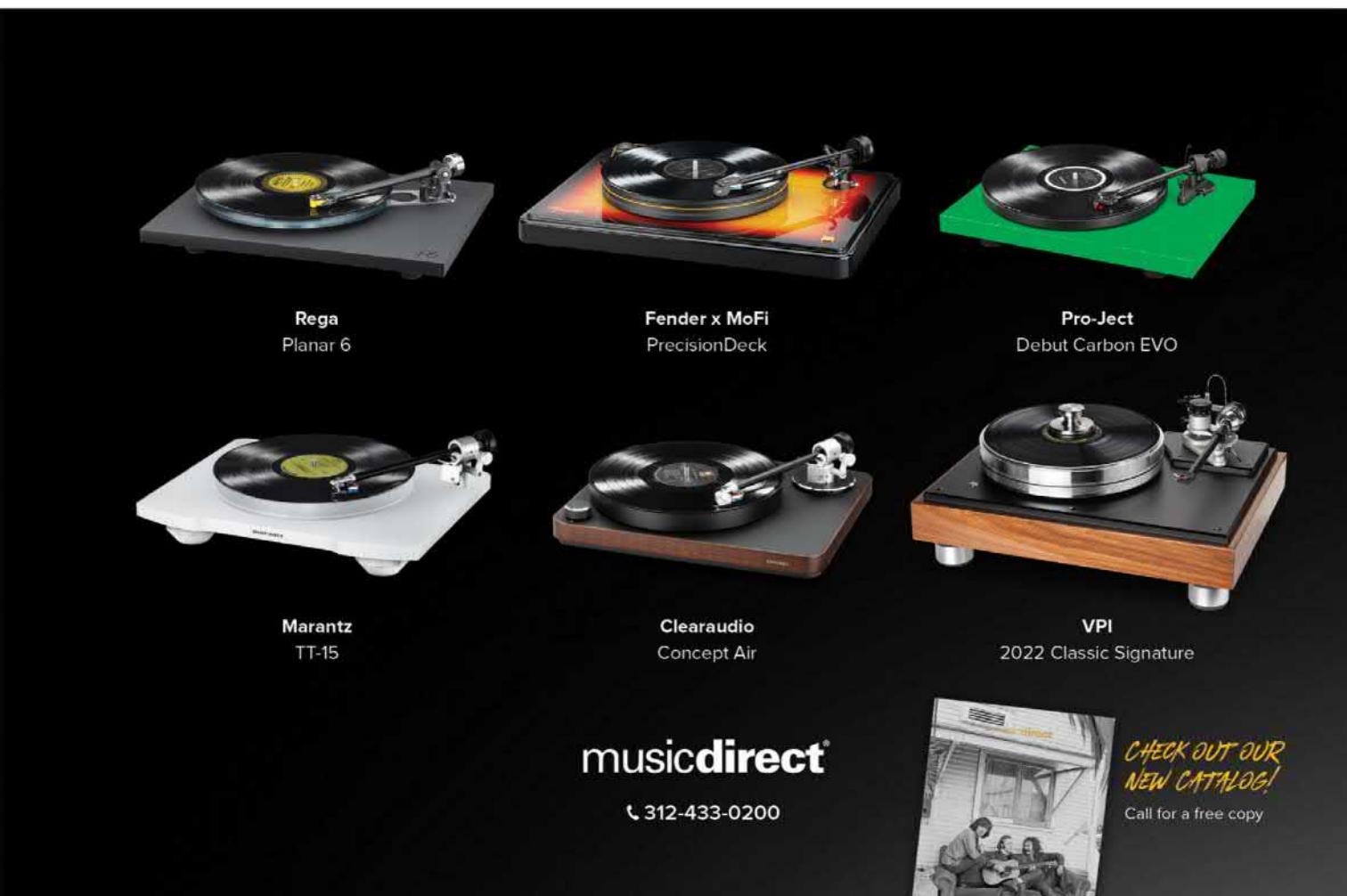
Some cuts on *Maternity Beat* take time to unfold, opening with slow, simmering passages that gradually give way to passionate improvisation—or else there's a suite-like element connecting two songs. The brooding, introspective opener, "On the Horizon Part 1" helps set the stage

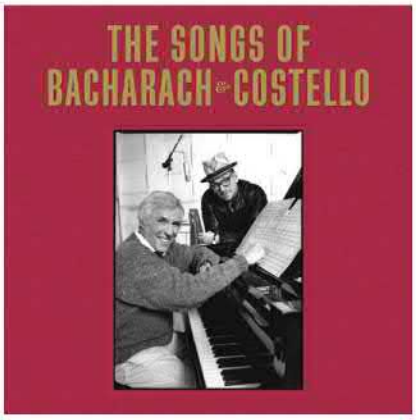


for the fiery "On the Horizon Part 2," and the closing tracks, "Maternity Beat" and "Maternity Suite," develop along similar lines. During the quiet passages, a dark lyricism emerges that embraces nuance and color and makes full use of the varied instrumentation of the Trondheim Jazz Orchestra. When the tempo picks up and the band catches fire, the energy we associate with Mollestad's trio is still there, but the sound is much more panoramic.

Part of what elevates these performances beyond metronomic jazz-rock or cerebral math rock is the strong sense of interplay between the musicians. When Martin Myhre Olsen solos on soprano saxophone during "On the Horizon Part 2" and drummer Torstein Lofthus drives hard underneath, that sparks spontaneous interaction in the other players, and parts of *Maternity Beat* have a compelling live-in-the-studio feel. The distinct style of each soloist also helps steer the music away from cliches. Even in the most Mahavishnu Orchestra-like moments, violinist Adrian Løseth Waade never registers as a Jerry Goodman clone. In fact, at times you'll hear some fairly straightforward jazz violin during his solos while saxophonists Martin Myhre Olsen and Petter Kraft seem to have some free jazz in their DNA. Used sparingly, the ethereal and sometimes wordless vocals of Ingebjørg Loe Bjørnstad and Mai Elise Soldberg add an ethereal layer to what is already a rich tapestry of sound.

Mollestad has been compared to Mahavishnu-era John McLaughlin. Few guitar players can match McLaughlin's intensity from that period, but Mollestad is up to the task, and she has a big, beefy tone to go with it. Here I'm particularly reminded of the Mahavishnu Orchestra's *Visions of the Emerald Beyond*, where McLaughlin added strings and horns to the mix. *Maternity Beat* also calls to mind Miles Davis' *Aura*, which featured arrangements by Danish trumpeter Palle Mikkelborg (and also happened to include McLaughlin as a guest artist). I hear the late Jeff Beck in Mollestad's playing as well, and especially on the leadoff single from the album, "All Flights Cancelled." The title suggests passengers stuck in an airport, but this song achieves liftoff in the first few bars and keeps ascending. Guitarists with technique to burn sometimes struggle to find a context that brings out the best in their playing, but Mollestad's talents as a composer are on par with her prowess as a guitarist. If you haven't heard Hedvig Mollestad, "All Flights Cancelled" would make a good taste test—and if that song resonates with you, *Maternity Beat* is available as a single CD or a 2-LP set on Rune Grammofon, a Norwegian label that's supported forward-thinking music for 25 years. tas





MUSIC ●●●●◐ SONICS ●●●●◐

Elvis Costello and Burt Bacharach: *The Songs of Bacharach & Costello.* UMe (2 LPs).

When an angry Elvis Costello burst upon the world stage in 1977 with *My Aim Is True*, amid the tumult of the punk invasion, he brought unbridled passion, a cynical take on life, and a pen full of vitriol. Only the track "Alison" hinted at the heart of a pop balladeer that would go on to collaborate with such middle-of-the-road artists as Paul McCartney and Swedish mezzo-soprano Anne Sofie von Otter. Yet critics and fans often spurned his tender mercies, deriding the striking chamber pop of 1993's *The Juliet Letters* (with the Brodsky Quartet) and 2003's brilliant orchestral song-cycle *North*. They also have dismissed Costello's fruitful association with pop composer Burt Bacharach, who died February 8 at age 94. This definitive 45-song, 2-LP/4-CD super-deluxe edition—also available on an abridged version on two 140-gram LPs and various digital formats—gathers all of Costello and Bacharach's collaborative work. It includes original-tape remasters of the 1998 album *Painted from Memory*, 19 previously unreleased tracks, a book of photographs, early draft lyrics, and a 10,000-word essay by Costello. It also includes *Taken from Life*, a new collection of 12 songs recorded in 2021 as the score to an as-yet-unproduced Broadway musical about unfaithful lovers. Those tracks feature vocalists Jenni Muldaur and Audra Mae.

The duo first teamed up in 1995 to co-write "God Give Me Strength" for the film *Grace of My Heart*. That Grammy-nominated project led to the full-album *Painted from Memory*. "To have written a song like 'God Give Me Strength' and simply stopped would have been ridiculous," Costello noted in his 2015 autobiography *Unfaithful Music and Disappearing Ink*. On *Painted from Memory*, melancholia, disillusionment, and heartache resound on such songs as "In the Darkest Place," "This House Is Empty Now," and the wrenching "I Still Have That Other Girl," which won a Grammy for Best Collaboration with Vocals. The tracks are orchestrated by Bacharach (with the exception of the title song, which was arranged by composer Johnny Mandel) and bathed in his signature blue glow—melancholy piano ballads bedazzled with staccato blasts of a lone flugelhorn, plaintive strings, and a purring trio of female backup singers.

Previously unreleased live material, including songs recorded by Costello and longtime keyboardist Steve Nieve, were recorded in 1998 and 1999 in the United Kingdom, Sweden, and Australia. The live version of Bacharach's classic 1964 Dionne Warwick hit "Anyone Who Has a Heart," with the Swedish Radio Symphony Orchestra and recorded with Bacharach on keys at London's Royal Festival Hall, is one of the set's highlights.

The new *Taken from Life* material finds Costello's longtime rock band the Imposters popping up on Bacharach-led performances from Costello's 2018 Grammy-winning album *Look Now*, as well as two previously unreleased tracks. It also excerpts jazz guitarist Bill Frisell's recording *The Sweetest Punch: The Songs of Costello and Bacharach*, a 1999 companion to *Painted from Memory* that offered instrumental versions of the songs and appearances by vocalist Cassandra Wilson (a duet with Costello on "I Still Have That Other Girl") and clarinetist Don Byron.

"In Bacharach, Costello has found his most empathetic sidekick yet," *Rolling Stone* opined in 1998. The fact that these recordings hold up so well speaks volumes about the rewards of their partnership. **Greg Cahill**

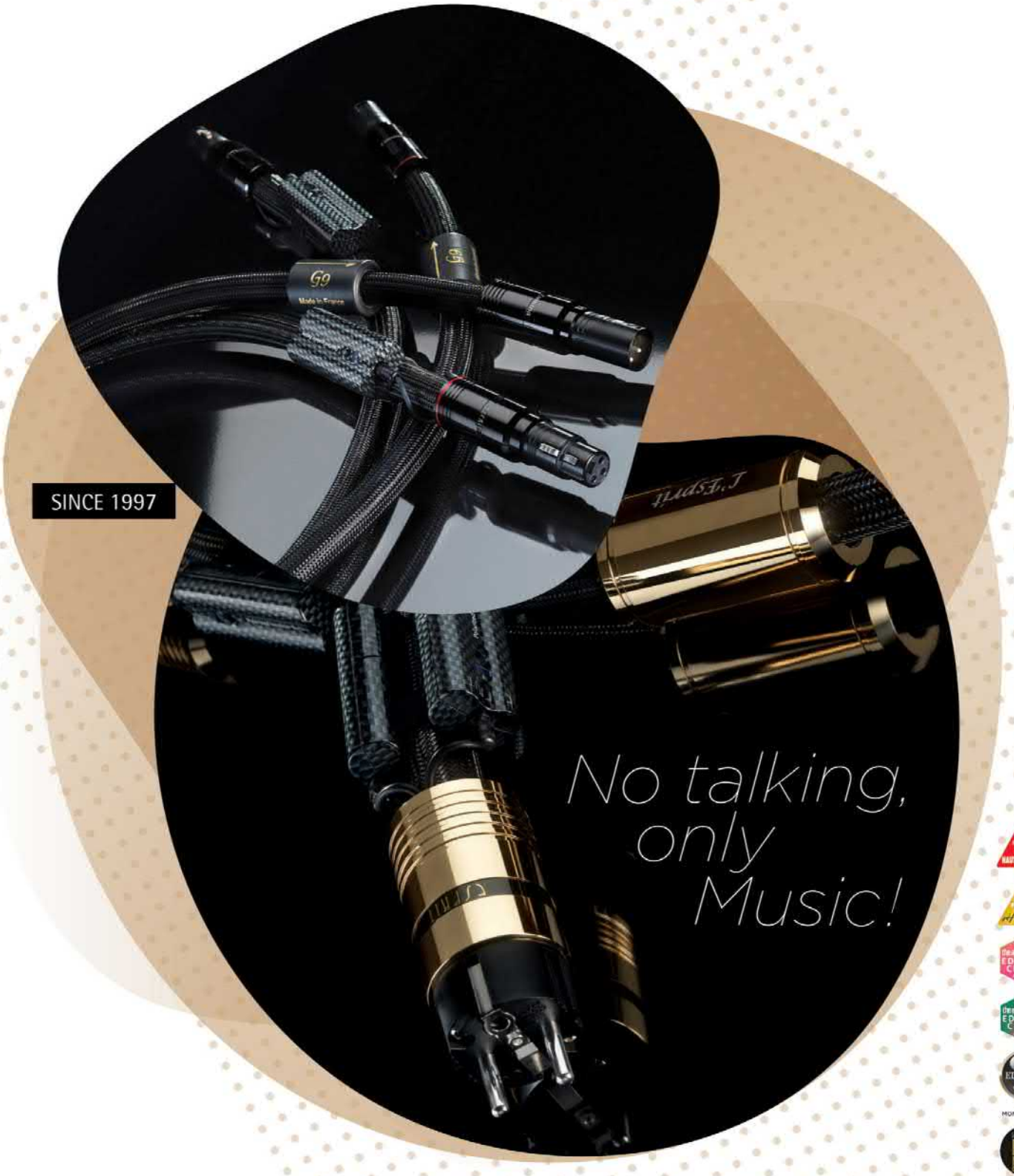
Further Listening: Elvis Costello: *North*

MUSIC ●●●●○ SONICS ●●●●○

The Arcs: *Electrophonic Chronic.* Easy Eye Sound.

Between the Black Keys, solo records, production credits, and the Arcs, Dan Auerbach has hit his full career stride with swagger and style. The second record by the Arcs, *Electrophonic Chronic,* is a soulful stunner. While Auerbach doesn't totally put his guitar down, the songs feature much more bass, Hammond B3, and electro-synth than the garage crunch of his full-time band. It's been seven years since the Arcs' debut, *Yours, Dreamily*. The hiatus occurred due to the death of bassist Richard Swift, though he appears on some of these recordings. At first putting the project aside, Auerbach and his fellow Arcs, which include Leon Michels from the Dap-Kings on keys, eventually finished it in memory of Swift. Melancholy aftereffects ripple through *Chronic*, and the second half delivers a clutch of exceptional soul ballads. There's also an obvious 70s psych vibe coloring this material. "Let's Keep Dreaming" comes out of the gate with trip-hop rhythms and Auerbach's heavily phased vocals leading the quartet. One of *Chronic's* strengths is Auerbach's expressive vocals, which often get buried in the Keys' raucous mix—but here his voice imbues yearning and depth into the slower songs, like "A Man Will Do Wrong" and "Only One for Me." Hopefully, the Arcs' next release is sooner than later. **Greg Gaston**

Further Listening: Marcus King: *Youngblood*



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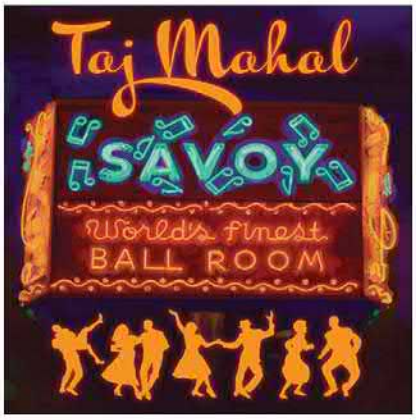

MUSIC ●●●●○ SONICS ●●●●○

Taj Mahal: *Savoy.* Stony Plain.

The first time I saw and heard Taj Mahal was in 1967, in the front room of the Ash Grove club where I was waiting to get in to see David Lindley's band Kaleidoscope. Taj Mahal was giving a guitar lesson over in the corner. Subsequently, I wore out my first copy of Taj's freshman release, *Taj Mahal*, which still ranks as one of my all-time favorite electric blues albums. On his latest album, *Savoy*, Taj enters the musical genre of big band blues, a genre that has been mined extensively by Duke Robillard and Roomful of Blues since the 1980s. Taj's take on standards by Duke Ellington, Louis Jordan, George Gershwin, and Louis Armstrong have more swagger and focus on the band leader than Robillard's ensembles, but Taj's fine back-up band still shines. Sonically Taj's vocals are front and center with all the instruments arrayed respectfully behind him. Guest vocalist Maria Muldaur joins Taj on "Baby It's Cold Outside," where Taj's lecherous vocals serve as a counterpoint to Muldaur's still lovely voice. Taken as a whole, *Savoy* successfully captures a musical genre that was formative for Taj Mahal. The super clean modern sound coupled with superior players certainly makes this album worth a listen. **Steven Stone**

Further Listening: Duke Robillard: *Swing;* Rachael and Vilray: *I Love a Love Song*

MUSIC ●●●●○ SONICS ●●●●○

Buddy Guy: *The Blues Don't Lie.* RCA.

The Blues Don't Lie continues a fruitful (three Grammys and a fourth nomination), even revitalizing, relationship the now-86-year-old blues titan Buddy Guy struck with producer Tom Hambridge back in 2008. Six of the 16 cuts feature guests in duet roles, but Guy doesn't really need a little help from his friends: his guitar work remains powerful and electrifying, as he demonstrates most emphatically on the album-opening "I Let My Guitar Do the Talking," a wah-wah- and horn-drenched autobiographical rouser; but as the album unfolds his singing, especially on some tunes addressing contemporary social ills, makes this a fully realized personal statement. For instance, unchecked gun violence and the impotence of "thoughts and prayers" are at the root of Guy's seething indignation in "Gunsmoke Blues." Elsewhere he engages a gritty Mavis Staples in an unflinching remembrance of Civil Rights era hardships, and in "Follow the Money" he slices and dices the pay-for-play-culture in frank terms, with James Taylor adding understated harmonies in support. Tips of the hat to Slim Harpo in a Delta-redolent solo acoustic "King Bee" and to B.B. King via a grinding "Sweet Thing" find Buddy feeling it big time, an octogenarian on a mission. **David McGee**

Further Listening: B.B. King: *Blues on The Bayou;* Mavis Staples: *If All I Was Was Black*

MUSIC ●●●●○ SONICS ●●●●○

Robert Hill & Joanne Lediger: *Revelation.* Independent/Bandcamp.

As a slightly revisionist view of gospel blues, *Revelation*, from slide guitarist-vocalist-songwriter Robert Hill and vocalist Joanne Lediger (with a little help from their friends), imbues this blues subgenre with contemporary vitality while preserving its traditional gritty messaging on the wages of sin. This approach extends to four Hill originals, including the rousing "Jesus by the Riverside," which, with a boost from Ed Alstrom's B3, becomes a tent revival rouser built on Lediger's soul piercing testifying and Hill's pungent slide retorts. The duo is clearly taking its cue from Blind Willie Johnson, the avatar of gospel blues, via covers of four of his tunes, not the least being a seething album opening take on Johnson's 1930 masterpiece, "John the Revelator," which stomps and burns behind Hill's sizzling Resophonic and moaning harp supporting Lediger's urgent declaiming. Amidst the admittedly dire warnings of Tom Waits' "Down in the Hole" (Waits himself contributed to a Blind Willie tribute in 2016), Hill fashions an ostinato guitar riff, driving and malevolent, as his daughter Paulina delivers a commanding lead vocal over a steady bass-and-drums pulse, and voila, the song is reconfigured as a celebratory rhumba-tinged workout—one of many surprises on an album worthy of its title in more ways than one. **DM**

Further Listening: Blind Willie Johnson: *Dark Was the Night*

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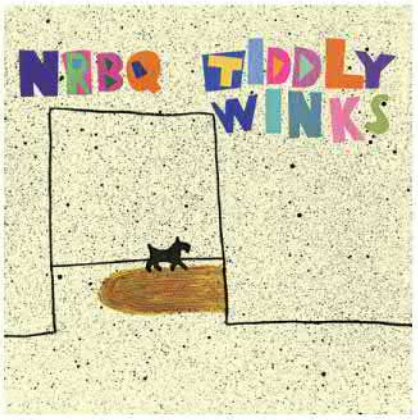

MUSIC ●●●●○ SONICS ●●●●○

NRBQ: *Tiddlywinks.* Omnivore.

Originally released in 1980 on Rounder Records, the eighth offering by NRBQ (aka the New Rhythm and Blues Quartet) captures the irrepressible drive and eccentric charm of the ultimate bar band. An eclectic package ranging from rockabilly ("That I Get Back Home") to quirky rhythm 'n' blues ("Hobbies") and perfect pop confections (Al Anderson's "Feel You Around Me" and "Never Take the Place of You"), with nods to jazz ("Music Goes Round and Round") and to the Everly Brothers ("Beverly"), *Tiddlywinks* is the best NRBQ studio album to date (their most recent, their 24th, was 2021's *Dragnet* on Omnivore). The catchiest tune here, Terry Adams' driving "Me and the Boys," was famously covered two years later by both Dave Edmunds (*D.E. 7th*) and Bonnie Raitt (*Green Light*), though NRBQ's version reigns supreme. Bonus tracks include bassist Joey Spampinato's loping pop ditty "I Don't Think Of…" and Adams' edgy blues "Big Goodbyes," both from 1983's *Tapdancin' Bats*. Anderson, who left the group in 1994 and would become an award-winning Nashville songwriter, plays one of the all-time great rock 'n' roll guitar solos on Adams' raunchy rocker "Want You to Feel Good Too." **Bill Milkowski**

Further Listening: NRBQ: *At Yankee Stadium; Grooves in Orbit;* Los Lobos: *How Will the Wolf Survive?*

MUSIC ●●●●○ SONICS ●●●●○

Jim Carroll Band: *Catholic Boy.* Fat Possum (2 LPs).

Catholic Boy, the Jim Carroll Band's 1980 debut album, recently got reissued twice, in 2018 (reviewed in Issue 304) as a remastered original, and now as a limited edition 2-LP set. The extra disc includes six previously unreleased recordings from the 1978 sessions in Bolinas, where Carroll spent a few years away from his home in NYC to recover from his notorious heroin habit, search for peace of mind, and write. The demos, beautifully remastered from original tapes by JC Band's bassist Stephen Linsley, explode with pure rock 'n' roll energy. Don't expect rehearsals of fledging musicians in search of their voice; the performances are finely executed, albeit spiced with spontaneity and enthusiasm that only demos or live performances deliver. Carroll's complex lyrics and his quivering voice, impossible to mistake for any other, are the recording's electrifying focal points. The last piece, a live 1978 Rio Theater performance of "Dead Heat" in San Francisco, is a precious rarity. Jim is singing, reciting, and nearly rapping, his "Book of Nods" luring the audience in, and the band's improvised jam is totally synchronized with the vocals. Last but not least, the spread inside the album's cover is filled with rare photos and memories. A special tribute, indeed. **Malgorzata Quinn**

Further Listening: Jim Carroll: *Pools of Mercury; Runaway*

MUSIC ●●●●○ SONICS ●●●○○

Harvey Mandel: *Who's Calling.* Tompkins Square.

Best known for his haunting 1968 instrumental exploration of jazz pianist Duke Pearson's "Cristo Redentor," Harvey "The Snake" Mandel enjoys a solid reputation among rock-guitar aficionados. Once considered by the Stones as a replacement for Mick Taylor (Mandel had worked with Canned Heat and John Mayall), the Detroit guitarist has largely flown under the radar in recent years. This strong return to Bay Area roots-leaning indie label Tompkins Square shows he's lost none of his luster. The opener, "Last Walk," is a blistering, psyche-driven rocker rife with steely serpentine licks that would fit comfortably on any late-period Jeff Beck album. Backed by former Gov't Mule bassist Andy Hess and drummer Ryan Jewell, Mandel slithers through a riveting set of eight blues-soaked rock instrumentals. Hess and Jewell create a modern jazz-influenced backing on the title track, the subdued "Lucky Sevens," and the chugging "See You Around." On the soaring "Moon Walk," this dynamic rhythm section forms the perfect platform for Mandel's sonic adventures. "Love You Forever" finds Hess and Jewell laying down a loping, mid-tempo beat and dark bass lines as Mandel weaves a reverb-and flange-powered prog-rock solo with shades of Robin Trower. Just when you thought nobody made rock records like this anymore. **Greg Cahill**

Further Listening: John Mayall: *USA Union*

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MUSIC ●●●●● SONICS ●●●●●

Steely Dan: *Countdown to Ecstasy.* Geffen/Analogue Productions.

Recording sessions for Steely Dan's second album were squeezed between dates on a tour that was more drudgery than ecstasy. As a result, in Donald Fagen's words, the album came together in a "desultory, haphazard fashion." In the end, the songwriting and performances were solid front to back, but the fact that some songs sound different than others may have reflected the erratic recording schedule. The comparatively compressed "My Old School," for example, differs markedly from the more open-sounding "Your Gold Teeth," and Fagen's vocals also sound different. The beefiest and best-sounding cut is "Show Biz Kids," wherein Fagen takes shots at the beautiful people while Rick Derringer's slide guitar oozes sleaze and swagger. If one song maximizes the virtues of the Bernie Grundman-remastered 45rpm 2-LP UHQR vinyl pressing of *Countdown to Ecstasy*, it's "Your Gold Teeth." During some Santana-like grooves, the instruments have more breathing room than on the original U.S. pressing. On this and other cuts, there's also a clarity to the background and midground instruments that sells me on the UHQR. On the other hand, the original U.S. pressing has a more lifelike presence—so I'll stop short of saying there's a definitive edition of *Countdown to Ecstasy*. **Jeff Wilson**

Further Listening: Laura Nyro: *Eli and the Thirteenth Confession*

MUSIC ●●●●● SONICS ●●●●●

Harry Belafonte: *Belafonte Sings the Blues.* RCA/Acoustic Sounds (LP).

This 1958 recording, the first of Belafonte's in stereo and said to be his favorite among his albums, got a curiously tentative reception, most reviewers granting the superb performances while finding little in the selections or the mostly jazz arrangements that can truly be said to constitute "blues," e.g., three covers of Ray Charles songs, another of Billie Holiday's "God Bless the Child" (heartfelt and intense, for Belafonte "the greatest song in the world"), a fine take on the great Arlen-Mercer "One for My Baby." Throughout, Belafonte's in glorious voice, his impeccable taste, masterly musicianship, exquisite phrasing, and interpretive intelligence everywhere in abundant evidence. With only "Hallelujah I Love Her So," "Mary Ann," and "Cotton Fields" to lighten the proceedings, he was here determined to present a more introspective, thoughtful, probing singer from his Jamaican albums. Belafonte fans need no urging, but all who love stylish, committed, deeply felt singing will be amply rewarded. Although the left/center/right miking so prevalent in early stereo places the singer in a pleasingly atmospheric center while the instrumentalists, brass in particular, reside on the relatively airless sides, the sonics are nevertheless rich, vibrant, and vividly transparent. **Paul Seydor**

Further Listening: Harry Belafonte: *The Many Moods of Belafonte*

MUSIC ●●●●○ SONICS ●●●●●

V/A: *Pacific Breeze 3: Japanese City Pop, AOR & Boogie 1975–1987.* Light in the Attic (2 LPs).

Japanese city pop has seen a resurgence in recent years, catapulted to current popularity through social media platforms such as YouTube and TikTok. Often characterized by its glossy production, steady reverberating beats, luxurious string sections, and beefy synth-bass lines, city pop has returned to provide its opulent nightlife music for a new generation. One of the strengths of Light in the Attic's third *Pacific Breeze* compilation is that it expands the notion of what city pop sounded like outside of what styles are typically included on a city pop mix. While the opening track, "Bewitched (Are You Leaving Soon)" by Naomi Akimoto, kicks off the compilation with a quintessential city pop sound, it is followed by Atsuko Nina's "Tonkachi," which displays harsher beats more akin to new jack swing. Influence from new wave appears as well, such as "Scandal Night" by Miharu Koshi, which brings to mind the Talking Heads with its uncanny sound effects and pulsing bass. *Pacific Breeze 3* proves that Japanese city pop, AOR, and boogie are not definable by one set of features but instead contained sprawling styles that reflected the increasing cross-cultural transfer of the rapidly globalizing music industry of the late 70s throughout the 80s. **Hannah Blanchette**

Further Listening: Tatsuro Yamashita: *For You*; Mariya Takeuchi: *Variety*

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Frank Kimbrough: *Frank Kimbrough 2003–2006*. Palmetto.

For many jazz fans, Frank Kimbrough might be familiar only as the pianist in the Maria Schneider Orchestra, in which he played from 1993 until his sudden death in December 2020 at the age of 64. This gorgeous 4-LP reissue of sessions from 2003 and 2005 may or may not heighten his popular profile, but it underscores why he has long been a favorite of critics, a beloved mentor at Juilliard, and a "musicians' musician." That last status was confirmed by 2021's digital release of KIMBROUGH (Newvelle Records), a collection of the pianist's compositions recorded by 67 former bandmates, students, and friends. *Frank Kimbrough 2003–2006* brings together the trio albums *Lullabluebye*, with longtime collaborators Ben Allison (bass) and Matt Wilson (drums), and *Play*, with bassist Masa Kamaguchi and drummer Paul Motian. Both were remixed by original producer Matt Balitsaris—with the intention of "correcting" his initial "conservative" mix by bringing the basses and drums into more equal footing in conversation with Kimbrough's piano—and remastered by A.T. Michael MacDonald. The results on vinyl (digital and CD versions were released last year) are resplendently evident in the precise placement of instruments on an intimate soundstage, and the balance of warmth and clarity, just what most listeners will want from piano trio recordings.

Kimbrough wrote all but four of the 20 pieces; Allison contributed "Ben's Tune" to *Lullabluebye*, which also includes John Barry's "You Only Live Twice," and *Play* features two Motian compositions, "Conception Vessel" (recorded with Keith Jarrett on the drummer's 1973 debut as a leader) and this album's title track. Most tunes run four to six minutes, with "Play" clocking in at a modest three minutes, and the dreamy "Waiting in Santander," which Maria Schneider describes as "music that transcends being *music*," running just over eight. Every performance feels a perfect length, allowing enough time to explore and extrapolate themes and harmonies, and lock into jagged rhythms or deconstruct them into an ethereal flow.

The Kimbrough-Allison-Wilson trio grooves like a well-oiled, precision-tuned, long broken-in machine, attributable to decades of familiarity. Kimbrough and Allison co-founded the Jazz Composers Collective in the early 1990s, and the trio collaborated in the Herbie Nichols Project in 2001. Across *Lullabluebye*'s two discs, you can recognize what Kimbrough absorbed in his studies of Nichols, Bill Evans, Thelonious Monk, Andrew Hill, and Paul Bley, but the influences have been internalized and digested to the point where it's only Kimbrough that you hear. At any pace, from the jaunty James Bond theme to the reflective "Eventualities," there's a celebratory quality. The Kimbrough-Kamaguchi-Motian trio moves into spaces where they are feeling out one another and establishing a new mode of pensive exploration. It's a different sort of *Inception*-like aural architecture.

The new mixes invite the kind of listening where you can shift your focus from piano to bass to drums at any moment and gain a whole new perspective on the music being played. Or you can relax your attention and drift in the stream. John Cage once defined "our proper business" in life as the practice of "curiosity and awareness." The music on *Frank Kimbrough 2003–2006* is both the embodiment of and a tutorial in that practice. **Derk Richardson**

Further Listening: Maria Schneider Orchestra: *Data Lords*; Frank Kimbrough/Masa Kamaguchi/Kirk Knuffke: *Ancestors*

MUSIC ●●●●● SONICS ●●●●●◐

Brad Mehldau: *Your Mother Should Know: Brad Mehldau plays The Beatles*. Nonesuch.

The Glenn Gould of our time tackles the music of the most universally beloved and harmonically sophisticated pop group of all time with equal parts reverence and audacious virtuosity. On a technical level alone, this album is stunning. Mehldau's gift for reharmonization, reinvention, and counterpoint remains unparalleled. To hear him weave intricate counterpoint into the fabric of his stride piano version of the buoyant title track, deliver some two-fisted roadhouse boogie-woogie on "I Saw Her Standing There," or settle into the unsettling harmonies of "I Am the Walrus," a tune that he builds to Lisztian heights, is spellbinding. His reinvention of "Baby's in Black" takes on a ruminative, gospel-ish feel, underscored by a hypnotic pedal point. His delicate reimagining of "She Said She Said" is more Erik Satie than Beatles, while his gentle rendering of "Here There and Everywhere" is as affecting as any romantic ballad in the Great American Songbook. His cascading counterpoint line in his left hand while massaging the familiar melody of "If I Needed Someone" in his right hand is a masterful touch. And his interpretation of "Golden Slumbers" is positively rhapsodic. Even the upbeat "Maxwell's Silver Hammer" gets a pensive spin by maestro Mehldau. **Bill Milkowski**

Further Listening: Brad Mehldau: *Live in Tokyo*; *After Bach*

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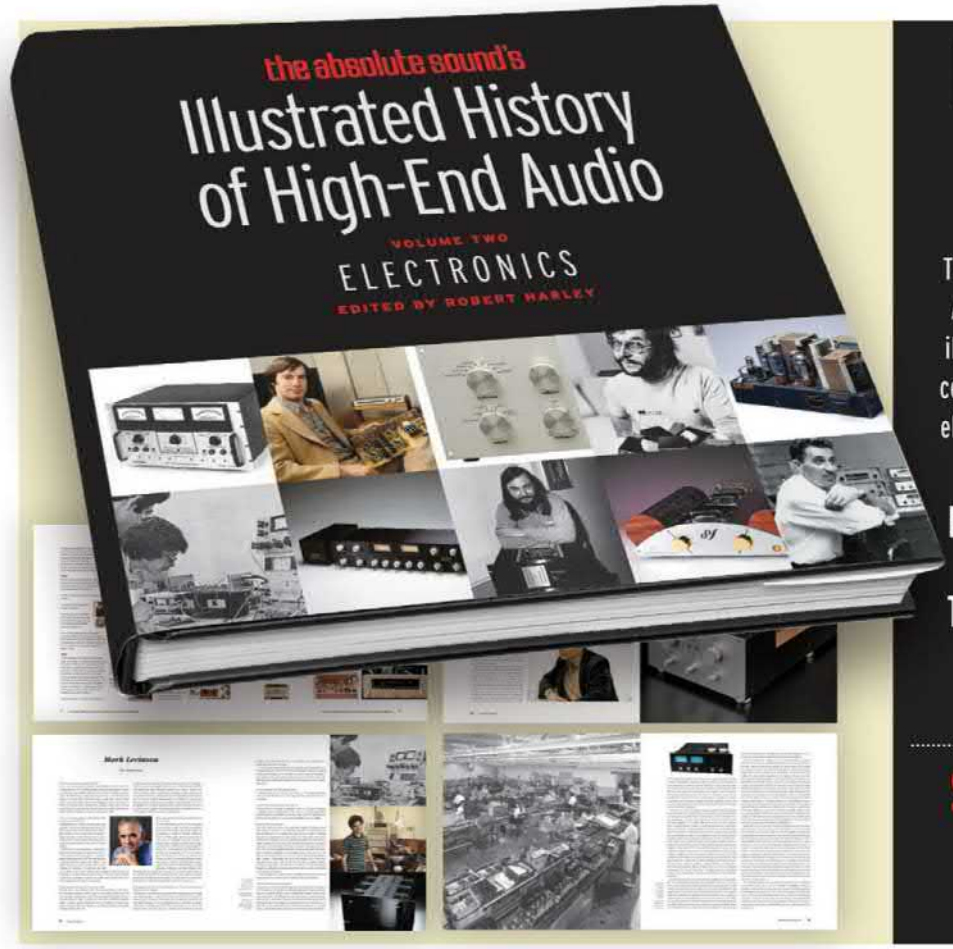

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MUSIC ●●●●◐ SONICS ●●●●○

Paco de Lucía: *Paco de Lucia: The Montreux Years.* BMG.

In his lifetime, the celebrated guitar virtuoso Paco de Lucía became synonymous with flamenco music and culture. Despite de Lucía's lack of a formal music education, his artistic vision and openness to collaboration helped reshape the traditional Spanish genre as he integrated elements of jazz, classical, and Brazilian harmonies and traditions, thus bringing to world-wide prominence what is known today as *Nuevo Flamenco*. No less a guitar icon than Eric Clapton described him as a "titanic figure in the world of flamenco music."

De Lucía's influence on flamenco music and its broader acceptance cannot be overstated. Born Francisco Sanchez Gomez in 1947 in southern Spain and raised in a family of musicians, the guitarist turned heads at an early age and recorded his first record at 14. The range of his technical skills (fiery *picados* and *rasqueados* in particular) combining the lightning right-hand speed and intuitive improvisational skills remain breathtaking. While many aficionados are most familiar with de Lucía as a member of the Guitar Trio with John McLaughlin, and Al Di Meola (which led to their genre-bending 1981 recording, *Friday Night in San Francisco*; its follow-up, *Saturday Night in San Francisco*, was recently released by Impex Records to rousing critical acclaim), some of de Lucía's finest live performances were captured at the Montreux Jazz Festival in Switzerland. Reissued by BMG as part of its Montreux Years Series of releases and mastered by Tony Cousins at Metropolis Studios in London, the eight tracks span from 1984 to 2012. They are available in the 180-gram 2-LP gatefold set reviewed here or as MQA CD or HD digital. Fittingly, a warm homage to de Lucía by McLaughlin is included in the liner notes along with seldom seen photos from Paco de Lucía's Montreux shows.

Although de Lucía's skills are often best appreciated in solo concert, the album's mostly ensemble performances brim with heat and emotion from the darker contemplative modalities of "El Tesorillo" (2006) to the exuberant dance rhythms of "Buana Buana King Kong" (1984). In the brilliant, close-miked solo track "Variaciones de Minera" (2012), de Lucía's famous picado and tremolo techniques offer a veritable clinic in the art of flamenco performance. The recordings are sensitively mixed and dynamic, with good spatiality and sharp imaging. The sound of each venue is clearly differentiated from one another, reflecting the unique acoustics of space and the changing ensemble of musicians over the years. The surfaces of the heavy vinyl tracked smoothly and pristinely quiet. Curiously, de Lucía's guitar sound conveyed a warmer overall timbre—a roundedness to the treble attack not necessarily typical of the brash cutting nature of most flamenco instruments—but highly satisfying to the ear nonetheless. De Lucía died in 2014, but these recordings represent a rich remembrance of a stellar talent to whom *every* contemporary flamenco player owes a debt of gratitude. John McLaughlin said it best: "In almost every Flamenco guitar player today, you will hear Paco's influence." **Neil Gader**

Further Listening: Paco de Lucía: *Siroco; Fuente y Caudal (Fountain and Flow)*

MUSIC ●●●●● SONICS ●●●●◐

Patricia Barber: *Nightclub.* Impex (2 45rpm LPs).

This album dates from 2000; now, over 20 years later, its state-of-the-art sonics come out sounding newly minted in Impex's vividly transparent 1-step vinyl remastering. I'm unaware Barber has ever claimed a Sinatra influence, but this is as fully a "concept" album as any from his Capitol years. Barber wanted to evoke the intimacy that develops between audience and musicians in a nightclub in the wee small hours where only the lonely are still nursing their drinks and blues, romantic love in its many aspects uniting the selections: anticipation, yearning, unrequited, disappointed, self-destructive, obsessive, not to mention happy. The program is so intelligently chosen and put together, Barber's inspired musicianship, conviction, and attention to lyrics so scrupulous throughout, that she even manages to elevate a couple of movie-derived chestnuts like "Alfie" and "A Man and a Woman" (the former, about a man who uses women like toys, ending the side that begins with "Just for the Thrill," about a woman so used). Barber's take on every song here often rivals the best I've heard from anyone, while her performance of the Cole Porter classic "So in Love," to which she gives a deliciously dark, ironic twist in the last verse, is quite simply *the* best in my experience. This is a really *great* album. **Paul Seydor**

Further Listening: Frank Sinatra: *In the Wee Small Hours*; Patricia Barber: *Clique*

MUSIC ●●●●○ SONICS ●●●●○

Jane Bunnett & Maqueque: *Playing with Fire.* True North.

Canadian soprano saxophonist-flutist Jane Bunnett's all-women ensemble Maqueque has been injecting new vitality into Afro-Cuban jazz since forming ten years ago. The current edition of the sextet steps outside of the group's original *raison d'être* of showcasing Cuban musicians by including Zimbabwean vocalist Joanna Majoko and Canadian guitarist Donna Grant. Together they generate sparks on energized numbers like the heavy-duty title track and "A Human Race," the latter featuring a brilliant soprano solo by the leader and a screaming wah-wah-inflected solo from Grant, a member of Prince's backing band 3rdeyegirl from 2014 up to his passing in 2016. "Daniela's Theme" is a showcase for 19-year-old violinist Daniela Olano, sister of the band's co-founder and gifted pianist, Danae Olano, who also intros a scorching Afro-Cuban version of Bud Powell's bebop classic "Tempus Fugit" with an excerpt from Bach's "Prelude and Fugue No. 2." Their vibrant version of Charles Mingus' "Jump Monk" opens with a burst of flamenco-styled palmas before tackling the intricate head. Vocalist Majoko unleashes her considerable scatting chops on the buoyant "Turquoise/Turquesa" and bassist Tailin Marrero contributes the alluring "Bolero A Un Sueno" for a lovely change of pace from the incessant *fuego*. **BM**

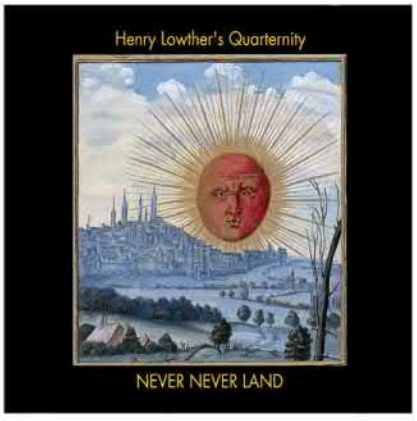
Further Listening: Jane Bunnett: *Spirits of Havana; Maqueque*

MUSIC ●●●●● SONICS ●●●●●

Benny Carter: *Jazz Giant.* Contemporary/Craft Recordings (LP).

Jazz Giant is a record that lives up to its billing. Benny Carter, along with Johnny Hodges, was one of the defining alto saxophonists of the swing era, and he was also a first-rate trumpet man, as he shows here on several tracks. Carter's improvisations are so beautifully crafted that he might be considered a "jazz musician's jazz musician," but not in any exclusive way; his unerring melodic sense draws even casual listeners into the music. This always inspires those around him to play their very best, and when that includes the likes of tenor great Ben Webster, trombone genius Frank Rosolino, guitarist Barney Kessel, and the picture-perfect rhythm section of Andre Previn, Leroy Vinnegar, and Shelly Manne, the results are absolutely delicious. Carter was also a great and very original arranger, and that talent is on full display on this session. Most of the program is devoted to evergreens that date from before the swing era, like "Ain't She Sweet" and "I'm Coming Virginia," but Carter's arrangements gave them new life. This classic record has been re-released countless times, but none of those reissues could approach the warmth and presence of this beautifully produced LP. Strongly recommended. **Duck Baker**

Further Listening: Benny Carter: *Aspects; Central City Sketches*



MUSIC ●●●●○ SONICS ●●●●○

Henry Lowther's Quarternity: *Never Never Land.* Jazz in Britain (2 CDs).

This superb Jazz in Britain release features a London group heretofore unknown except to people who remember their mid-1970s performances. The group was formed as a quartet that included Lowther on trumpet, flugelhorn, and violin and Phil Lee on guitar. A little later the group expanded to a quintet by adding saxophonists Art Themen and then Alan Wakeman, both of whom doubled on tenor and soprano. Both were impressive post-Coltrane players somewhat along Joe Henderson's lines, and Miles Davis' influence on Lowther is obvious, but his long, open lines are more akin to Freddie Hubbard. Phil Lee stands in contrast to most jazz or fusion guitarists of the time, at times evoking the early Gabor Szabo. His use of space, both as soloist and accompanist, adds immeasurably to the group sound, as do the big ears of drummer Trevor Tomkins and bassman Dave Green, and intelligent arrangements (e.g., Lowther's judicious use of the violin). All the compositions are by Lowther or Lee, and they range from lyrical ballads to straight-up burners. The more one listens, the more they realize that this group really doesn't sound like any that they have heard. How did they not get a record deal? **DB**

Further Listening: Group Sounds Four & Five: *Black & White Raga*; John Taylor: *Fragment*

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MUSIC ●●●●◐ SONICS ●●●◐○

Secret Love Letters. **Franck, Chausson, Szymanowski, Debussy. Lisa Batiashvili, violin; Giorgi Gigashvili, piano. The Philadelphia Orchestra, Yannick Nézet-Séguin, conductor. DG.**

We've seen a trend toward "conceptual" releases of late—this year's Grammys clearly reflected that—and violinist Lisa Batiashvili is not only on board with it, but seems to be the reigning queen of classical concept albums. So here we go with *Secret Love Songs*, her latest bite at the apple, suggesting secret, perhaps forbidden or unsanctioned, love. It sounds like a title made up by someone sitting in an office in Berlin…but there's actually some substance to it.

The Franck Sonata—he composed only one (apart from juvenilia), so no need to say more—was written in 1886 as a wedding gift for his fellow Belgian, the violinist Eugène Ysaÿe. Nothing secret about that. Nor is it a secret that this is one of the greatest of all works for violin and piano. The performers give an outstanding account of it, from the opening, very "*ben moderato*," Allegretto right through to the end. In the slower pages Batiashvili takes her time, playing expressively, luxuriating in the portamenti both up *and* down. At speed she is flawless, and superbly partnered by Gigashvili. The recording, made at the Teldex Studio in Berlin last April, is topnotch.

It might be fair to say that Szymanowski's Violin Concerto No. 1 (1916) really *does* hold a secret. For it has been suggested that this intense, dreamily nocturnal work was inspired by the love poem *Noc Majowa* (*May Night*), which alludes to avian lovers "burning in amorous conflagration." Be that as it may, what's of lasting value here is not any message that might be conveyed, secret or otherwise, but the feverishly sensuous musical language Szymanowski developed to suggest it, one of the glories of the 20th century. Batiashvili's performance is emotional and superb, but that's as far as praise should go, because the concerto was recorded in Philadelphia's Academy of Music, resulting in orchestral textures that are dull at the top (are those really the Philadelphia Orchestra's violins?), muddy in the bass, and unacceptably indistinct. Szymanowski's sparkling pointillism suffers, and the "big" moments sound like a 1950s aircheck. None of this can be blamed on Yannick Nézet-Séguin (who's just extended his term as Philly's music director).

Ernest Chausson's slow-moving *Poème* for violin and orchestra comes next. It, too, was written for Ysaÿe, who wanted a concerto but got this instead. The "secret" here? The work was composed in 1896, apparently inspired by an 1881 story by Turgenev called "The Song of Triumphant Love" about two men in love with the same woman. At the time he wrote the story, Turgenev was himself living in a *ménage à trois* with Pauline Viardot and her husband Louis. Chausson may have been intrigued by this, but did not, in the end, try to convey any of it in his music—at least we don't think so. It nonetheless became the piece for which he is best remembered, and it is nicely done here, though yet again the Academy proves unkind to the orchestra. I have no idea who at Deutsche Grammophon green-lighted a recording there, but I hope the lesson has been learned.

Debussy's song "Beau soir" in the arrangement for violin and piano by Heifetz, with Nézet-Séguin this time at the piano, brings the album to a tender close. **Ted Libbey**

Further Listening: Szymanowski: Violin Concerto No. 1 (Tetzlaff, VPO, Boulez/DG); *City of Lights* (Batiashvili, various/DG)

MUSIC ●●●●● SONICS ●●●●◐

Williams: *Close Encounters of the Third Kind & Star Wars.* **Gerhardt, National Philharmonic Orchestra. Vocalion (SACD).**

Vocalion has been releasing recordings from the RCA Classic Film Score Series one at a time on SACD. The original LPs and CDs are all audiophile recordings, but it is even better to have them in hi-res audio. Their latest SACD release includes orchestral suites from *Close Encounters of the Third Kind* and *Star Wars*, which are the only more contemporary scores in the series. This makes sense because John Williams is the last important connection to the masters of the Golden Age. Williams arranged his own concert suite from *Star Wars*, but conductor Charles Gerhardt uses the original orchestrations (for larger orchestra) and adds an additional short two-minute cue to make a six-movement suite. *Close Encounters of the Third Kind* combines the stylistically disparate atonal music from early in the film with the hyper-Romantic final scene to make a coherent orchestral suite that contains the principal elements of the score. Gerhardt's performances are masterful and the sound is near demonstration quality. Zubin Mehta's *Star Wars* Suite (Decca) is better played, but this one is fine and contains the extra cue. This *Close Encounters* contains the best available version of the extended musical finale. **Arthur Lintgen**

Further Listening: *Sunset Boulevard: The Classic Film Scores of Franz Waxman* (Gerhardt, National Philharmonic Orchestra/Vocalion)

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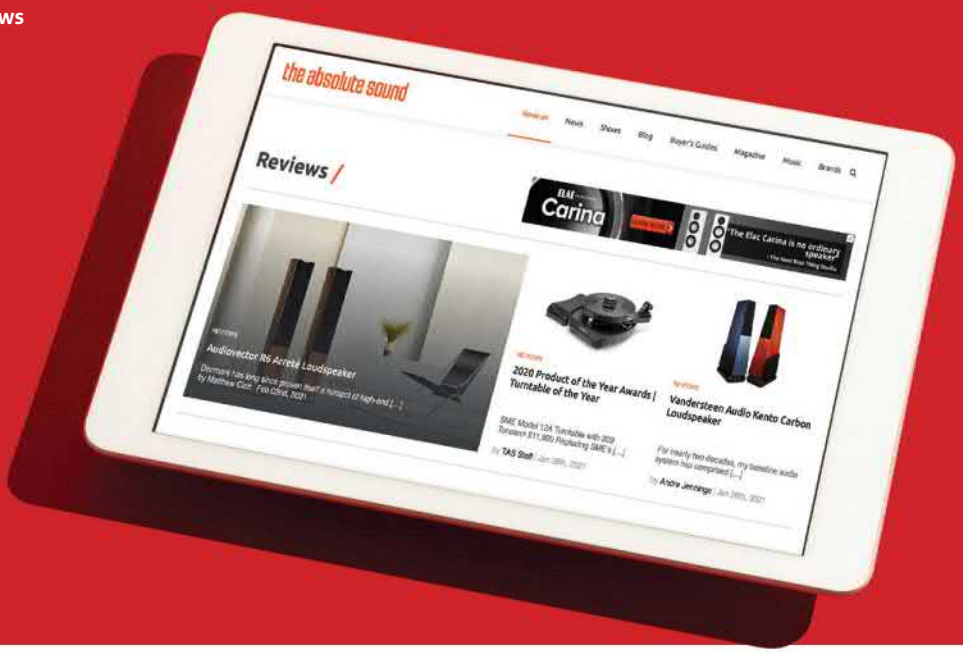
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MUSIC ●●●●○ SONICS ●●●●○

American Stories. McGill, Pacifica Quartet. Cedille.

Anthony McGill's previous release for Cedille, anchored by the two Brahms Clarinet Sonatas, is one of five discs I bring to audio shows—it sounds great and I never tire of the performances. McGill, the first Black principal player in the New York Philharmonic's 180-year history, is joined by the Pacifica Quartet in a recital that, he says, aims to "embrace the beauty that lies in the diversity of sound and story." Richard Danielpour's *Four Angels* was inspired by the Black Lives Matter movement and remembers the four girls killed in a Birmingham, Alabama, church bombing in 1963. Also programed are works by two leading contemporary African American composers: James Lee III's Quintet, a lament for the tragedy of Indian history that channels the insistent rhythm of a Pow Pow and Valerie Coleman's *Shotgun Houses*, a three-movement piece that honors Muhammad Ali, who grew up in the same neighborhood in Louisville, Kentucky, as Coleman did three decades later. Lastly, there's *High Sierra Sonata* by Ben Shirley, once addicted and homeless but now garnering commissions for film scores and concert works. The piece is steeped in the quiet power of the outdoors in much the same way as Copland's *Appalachian Spring*. As usual, Cedille's sound is richly characterized and transparent. **Andrew Quint**

Further Listening: Mozart/Brahms: Quintets (McGill/Pacifica)

MUSIC ●●●●○ SONICS ●●●●○

Martin, Vladigerov, Turina: Piano Trios. Trio Imàge. Avi Music.

Swiss composer Frank Martin's 1925 *Trio on Popular Irish Melodies* starts off slowly with one of several Irish tunes to come; it builds quickly to a fevered dance, with polyrhythms and mild dissonances that add a lot of interest. Celtic-based classical music usually sounds embarrassing and hokey to me, but here I'm mostly convinced. Martin treats the melodies more like classical themes to be developed, tangled up, and even slapped around a little. The Gigue is the least effective; it's the most relatively straightforward of the settings and ends awkwardly. Still, the writing is full of juicy intricacies. Bulgarian composer Pancho Vladigerov wrote his Opus 4 in 1916 while finishing his studies in Berlin. His offering is an earnest, passionate bit of high romanticism that, for its many good qualities, rarely knows when to take a breath. The themes are undistinguished if attractive, though the way he interweaves them is interesting. Joaquin Turina's gorgeous Second Piano Trio is impressionistic and effervescent; the high string writing shimmers, and the rhythms are spiced with Spanish flavors. These youngish musicians play with verve, wit, and camaraderie, and they sound completely at ease with the music. **Stephen Estep**

Further Listening: Rick Sowash: Four Piano Trios (Mirecourt Trio/ Gasparo)

MUSIC ●●●●● SONICS ●●●●○

Sierra: Piano Works. Matthew Bengtson, piano. lbs Classical.

There is a great tradition of keyboard studies created by composers known for more publicly oriented work, from Bach's universally revered *Well Tempered Clavier* and Chopin's mighty Etudes, to twentieth century masterpieces from Debussy and Ligeti. One of Ligeti's most notable students was Roberto Sierra, who, in turn, has created his own set of 12 Etudes, entitled *Estudios Rítmicos y Sonoros*. Not all great piano studies require hyper-virtuosity (some of the Bach works are suitable for beginners), but the Chopin and Ligeti sets are monstrously difficult, and that is the model that Sierra follows. He is fortunate to find a champion in Matthew Bengtson, a somewhat under the radar super-virtuoso (although he dismisses that label, as it implies a kind of showiness that he rejects). The lucidity and calm expressivity of Bengtson's playing is a marvel, with clear, lyrical lines threaded through dense patches of chromaticism. There are two other sets of multiple, short pieces by Sierra here, including 14 *Piezas Líricas*, miniatures inspired by the coloristic and architectural qualities of mature Stravinsky. The program concludes with another venerable format, music for children. The material in *Album for the Young* is deceptively simple, and flows neatly from the intriguing complexity of the works that precede it. **Peter Burwasser**

Further Listening: Ligeti: Études (Jeremy Denk, piano/Nonesuch)

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MUSIC ●●●●● SONICS ●●●●○

Mascagni: *Cavalleria rusticana.* Rachvelishvili, Pretti, Chicago Symphony Orchestra and Chorus, Muti. CSO Resound.

Pietro Mascagni's *Cavalleria rusticana* ("Rustic Chivalry") was something of a one-hit wonder for the composer. He was only 26 years old when it was premiered in Rome in 1890, and although he spent the rest of his long life composing more operas as well as other musical forms, he never came close to equaling the success of the one-act pot boiler. It would have been hard to do so; the opera was an immediate sensation, championed by Mahler among many other musical luminaries, and has never left the basic operatic canon. It ushered in the age of *verismo*, in which every day characters populated the librettos, quickly inspiring the creation of Leoncavallo's *Pagliacci*, another one-acter that it is regularly paired with, in a production known familiarly to opera lovers as *Cav/Pag*.

There have been well over one hundred recordings of *Cavalleria rusticana*, and the role of the peasant Turiddu has been a favorite of star tenors from Enrico Caruso to the present day. The Turiddu for this new concert version recording, Piero Pretti, is excellent, using his clear, sonorous voice to wring out every last bit of pathos from the score. His romantic rival, Alfio, is also vividly portrayed by fellow Italian Luca Salsi, a commanding baritone. The main attraction of this performance to opera fans, however, will be the rendition of Turiddu's scorned lover, Santuzza, by mezzo soprano Anita Rachvelishvili, a native of Tbilisi, widely considered to be one of the most impressive singers of the core Italian repertoire in her generation. Her voice is sumptuous and technically secure, but her great appeal is in the emotional heft she brings to her characterizations. She is not an attention grabbing diva, but, rather, a true singing actress. A comparison to the legendary Leontyne Price, but at a slightly lower register, is not inappropriate. The chorus is essentially a character in this drama, representing the townspeople in faithful verismo ethos, and the Chicago singers echo that spirit with thrilling passion. Riccardo Muti has always had a propensity for taming the sentimentality in music that is overtly heart-on-sleeve, securing focused, alert playing from his orchestra and letting the score speak for itself. That is certainly the case here.

The production is not typical for current opera recordings. New recordings of complete operas are much less common than they used to be, far outnumbered by re-issues of classic performances. This *Cavalleria rusticana* is, indeed, a fresh take, featuring contemporary singers of great appeal, but it is a live recording (made in February of 2020) of a concert version of the opera rather than a staged or studio performance. The concert was made in Chicago's acoustically excellent Orchestra Hall by the CSO's in-house label, but the singers do not sound as if they are individually miked, so there is plenty of air around their voices, and the tonality is somewhat static (which is not necessarily a bad thing). Not surprisingly, the mighty Chicago band sounds superb. A nice and unusual bonus of this production is that it includes a complete libretto, as opposed to the more common practice these days of referring listeners to an online version. **PB**

Further Listening: Leoncavallo: *Pagliacci* (Björling, De los Angeles/ RCA)

MUSIC ●●●●● SONICS ●●●●●

Scriabin: *Poem of Ecstasy; Prometheus;* Piano Sonata No. 5. Yevgeny Sudbin, piano; Singapore Symphony, Lan Shui. BIS (SACD).

Poem of Ecstasy has fully earned every bit of its fame. The colors coaxed from the orchestra are brilliant yet always used in service of the music. Scriabin's main themes are easy to remember and recognize even as they make their peregrinations through the twists and turns of his chromaticism. And the heights of jubilant grandeur the piece reaches are surrounded by their own rare air. Shui and the Singapore Symphony are simultaneously polished, controlled, and invigorating, turning in a performance that ranks with the best. In the sonata, Sudbin wins every devilish challenge the composer throws his way, keeping the lines and rhythms clean while apparently having the time of his life. The miking makes the piano sound nearly psychedelic, with different parts of the keyboard coming from different places in the soundstage. It's like being inside the piano instead of just in the hall! *Prometheus* is a vivid tone poem depicting the evolution of the world and humankind from gritty chaos to "ultimate transcendence." Though parts of it feel like a less-inspired sequel to *Poem of Ecstasy*, it has more violent undertones and lurid orchestration. Again, a stellar performance in splendid sound. **SE**

Further Listening: Messiaen: *Éclairs sur l'au-delà* (Bastille Opera Orchestra, Myung-Whun Chung/Deutsche Grammophon)

Ad Index

Aavik Acoustics 37
ansuz-acoustics.com
Acora Acoustics 63
acoraacoustics.com
Acoustic Signature 103
acoustic-signature.com
Aesthetix 145
aesthetix.net
AGD Productions 83
agdproduction.com
Airtight A&M 131, 141
axissaudio.com
Aqua Acoustic Quality 51
aquahifi.com
Atma-Sphere 85
atma-sphere.com
Audience ..... Cover IV
audience-av.com
AudioQuest ..... Cover II, 13
audioquest.com
AudioThesis 121
audiothesis.com
Audiovector 47
audiovector.com
Aurender America, Inc. 33
aurender.com
Axiss Audio 131, 141
axissaudio.com
Balanced Audio 43
balancedaudio.net
Basis Audio 41
basisaudio.com
Bel Canto Design 88
belcantodesign.com
Bending Wave USA 151
bendingwaveusa.com
Berkeley Audio Design, LLC 149
berkeleyaudiodesign.com
Brinkmann Audio GmbH 79
brinkmann-usa.com
Burmester Audiosysteme GmbH 27
burmester.de
Cabasse 89
cabasse.com
Cable Company 98, 99
thecableco.com
CH Precision 39
ch-precision.com
Clearaudio 57
musicalsurroundings.com
Complete Guide to High End Audio 181
hifibooks.com
Constellation 107
constellationaudio.com
Core Power Technologies AV 73
underwoodhifi.com
Critical Mass Systems 133
criticalmasssystems.com
Crystal Cable 19
crystalcable.com
dCS 9
dCSaudio.com
Definitive Technology 23
definitivetechnology.com
Dynaudio North America, Inc. 123
dynaudio.com
Elite AV Distribution 177
eliteavdist.com
Elusive Disc 54
elusivedisc.com
Esprit Cables 165
esprit-audio.fr
Estelon 111
estelon.com
Fidelis Distribution 85
fidelisdistribution.com
Focal Naim America ..... Cover III
focalnaimamerica.com
Furutech 160
furutech.com
Gestalt Audio Design 169
gestalt.audio
Gold Note 71
goldnote.it
GoldenEar Technology ..... Cover II
goldenear.com
Graham Engineering, Inc 167
graham-engineering.com
Gryphon Audio Designs Aps 29
gryphon-audio.dk
Hana by Excel Sound 93
hanacartridges.com
Harbeth Audio Ltd. 85
harbeth.co.uk
Harmonic Technology 14
harmonictech.com
HiFi Rose 105
hifirose.com
Hi-Fi+ 179
hifiplus.com
JL Audio 143
jlaudio.com
Kef America 21, 75
kef.com
Kimber Kable 95
kimber.com
Kuzma Ltd. 177
kuzma.si
Legacy Audio 113
legacyaudio.com
Linn Incorporated 68, 69
linn.co.uk/try-linn
Living Sounds Audio 73
underwoodhifi.com
Lumin Music Systems 77
luminmusic.com
Lyra Analog 126
lyraanalog.com
Magico, LLC 3
MagicoAudio.com
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MBL North America, Inc. 55
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Metaxas & Sins BV 150
metaxas.com
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mibsdistro.com
MoFi Distribution 43, 105
mofidistribution.com
Monitor Audio 35
monitoraudiousa.com
MSB Technology 61
msbtech.com
Music Direct 127, 162, 163
musicdirect.com
Musical Surroundings 15, 57, 93
musicalsurroundings.com
Next Level Audio & Video 171
nextlevelav.com
Nordost Corp. 146
nordost.com
NuPrime Audio 34
nuprimeaudio.com
Pass Laboratories 139
passlabs.com
PrimaLuna USA 49, 115
primaluna-usa.com
Pro Audio Design 153
proaudiodesign.com
Rockport Technologies 119
rockporttechnologies.com
Rogue Audio 45
rogueaudio.com
Rosso Fiorentino Audio srl 121
rossofiorentino.com
Schiit Audio 97
schiit.com
Scott Walker Audio 101
scottwalkeraudio.com
Shunyata Research 6, 7
shunyata.com
Siltech 25
siltechcables.com
Sound Environment 128
soundenvironment.com
Sound Organisation 67
soundorg.com
Soundings HiFi 177
soundingshifi.com
Source Systems, Ltd. 77
sourcesystemsltd.com
Stein Music Pro GmbH 87
steinmusic.de
Stenheim Suisse SA 59
stenheim.com
Stillpoints 153
stillpoints.us
Suncoast Audio 109
suncoastaudio.com
T+A 159
ta-hifi.com
TAD Laboratories 153
technicalaudiodevices.com
TAS Illustrated History of High-End Audio 174
store.theabsolutesound.com
TAS Subscription Information 174, 181
theabsolutesound.com
Tekton Design 125
tektondesign.com
The Voice That Is 81
thevoicethatis.com
TheAbsoluteSound.com 179
theabsolutesound.com
Ultra Systems 74
ultrasystems.com
Underwood Hifi Inc. 73
underwoodhifi.com
United Home Audio 177
unitedhomeaudio.com
Upscale Audio 173
upscaleaudio.com
Upscale Distribuiton 49, 89, 115
upscaledistribution.com
UsedCable.com 177
usedcable.com
Vacuum Tube Logic (VTL) 147
vtl.com
Valve Amplification Co. (VAC) 65
vac-amps.com
Vandersteen Audio 90, 91
vandersteen.com
Victor Tube Surround 117
victortubesurround.com
Vitus Audio 155
vitusaudio.com
Wadax SA 11
wadax.eu
WBT-Industrie GmbH 157
wbt.de
Wilson Audio 17
wilsonaudio.com
Wireworld Cable Technology 53
wireworldcable.com
Wynn Audio 5
wynnaudio.com
YG Acoustics 31
yg-acoustics.com

Studying electroacoustics, the only two loves of my life could have been loudspeakers and microphones.

Q&A

Francesco Rubenni

Rosso Fiorentino

Neil Gader

What ignited your interest in the high end? Did it come from the music side or the electronics side?

It came from both. As a drummer in my youth, I had a need to listen to the songs we covered with the band. I soon realized that by listening on my father's system I could understand many more details and thus transcribe the parts more accurately. From there my passion for the world of high fidelity was born.

What gear made up your first high-end system?

A few decades ago, a Pioneer A-7 amplifier with KEF 104aB speakers.

When did audio develop from a hobby to a career?

It happened immediately after graduating in electroacoustics from the University of Salford, Manchester, around 2007.

Given all the different segments in high-end engineering, why did you choose to become a speaker designer?

Do we make our own choices in life, or do life's circumstances choose for us? Studying electroacoustics, the only two loves of my life could have been loudspeakers and microphones. I chose the former and have remained faithful to that choice.

How do you define "high-end" audio? Has that meaning changed for you over the years?

For me, "high end" is when a sound excites you, when it engages you, and when you feel a certain fullness and satisfaction at the end of listening to a track. It makes you want to listen to the track again and again. Each time, you notice an extra detail, as in a good movie that, thanks to the professionalism of the actors, the director, and the cinematographer, you never get tired of watching, even when you've seen it many times before.

Do you have specific reference recordings you listen to before you finalize a new speaker? What are they?

I do not have specific tracks. I listen to everything, and I often listen to my own recordings—the ones where I remember the sound of the instrument live, or at least I think I remember as the years go by.

What interesting fact or aspect about Rosso Fiorentino might surprise audiophiles?

I start from the fact that a true audiophile is unlikely to be impressed; otherwise, he would not be an audiophile. However, talking about our speakers, I would say their musicality. They are loudspeakers that do not immediately entrance you because everything just flows. The realization comes slowly, a step-by-step discovery, until you understand details and textures that you appreciate with time.

What are the greatest challenges confronting the high-end business in the next few years?

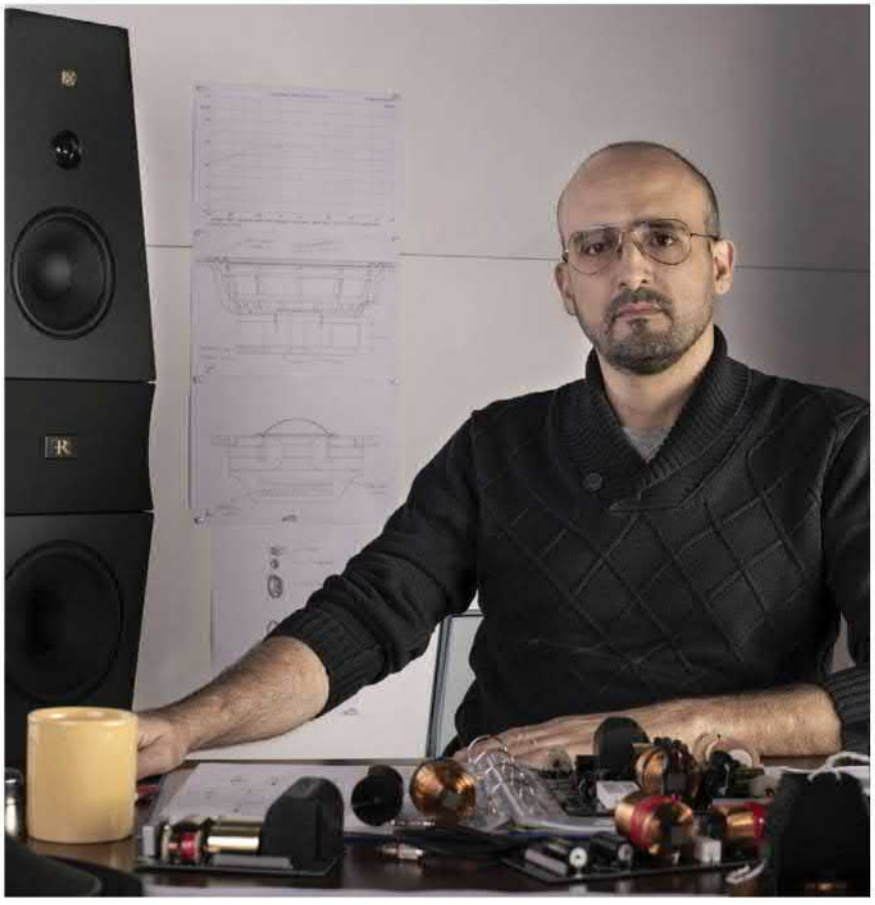
If musical, I would say that art in general survives this phase of human history if it returns to being exciting again and not just soothing people's souls. Then the world of the high end will flourish. In my opinion, it will.

Outside of audio, what do you do for fun?

Reading, cooking, and motorcycling. Also, not being easy to live with, but that is more like my second job :-).

What inspires you about your work?

Knowing that what we do is appreciated all over the world. tas



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Neil Gader
The Absolute Sound Magazine, Issue 325
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